

Use of Energy in Egypt, Past and Recent

**9th Oslo Group Meeting
Abu Dhabi, UAE**

May 2014

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INTRODUCTION

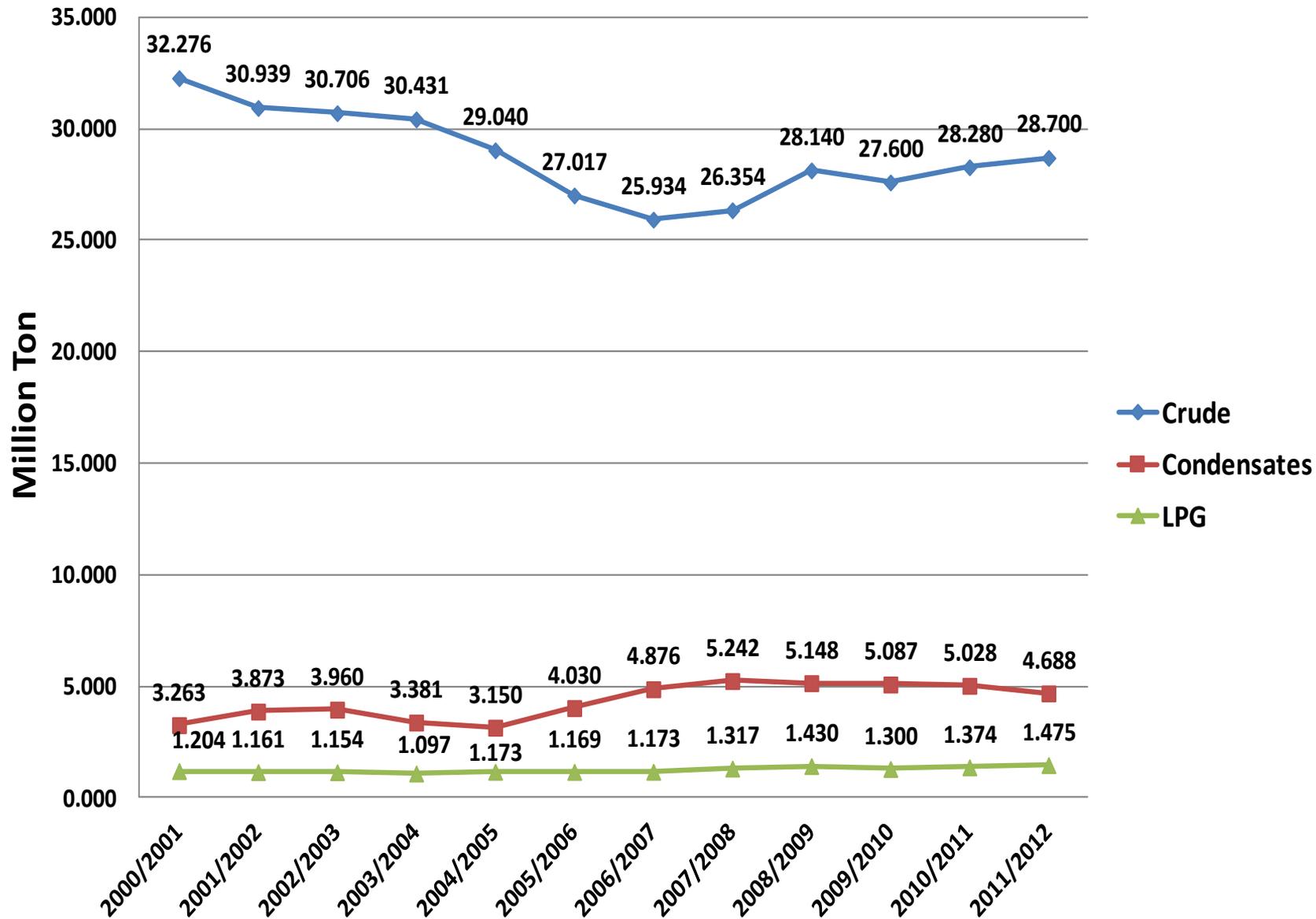
- **Energy statistics is a crucial tool to analyse the energy situation in order to provide the necessary vital information for policy makers, planners and researchers.**
- **A reliable energy statistics is really needed as energy plays a critical role in the social and economic development.**
- **This presentation demonstrates the latest historical data available on energy production and energy use in Egypt. The recent energy situation is also highlighted through energy production and consumption patterns as well as energy balance and energy flow.**
- **The presentation tackles the primary and secondary energy production in addition to the energy use of all energy fuels and every economic sector. The major industry subsectors electricity consumption has also been included.**

1. Evolution of Primary Energy Production

1.1 PETROLEUM

- **Petroleum production means the domestic production of crude oil, condensates and associated LPG.**
- **Crude oil production has reduced by 1% yearly.**
- **Its production decreased from 32.3 MT in 2000/2001 to 28.7 MT in 2011/2012.**
- **This deterioration has been partially compensated by the increase of the condensates production.**
- **Condensates production increased from 3.26 MT in 2000/2001 to 4.7 MT in 2011/2012, 3.1% per annum.**
- **The production of LPG from fields has enhanced yearly by only 1.7%. Its production increased from 1.204 MT in 2000/2001 to 1.475 MT in 2011/2012.**

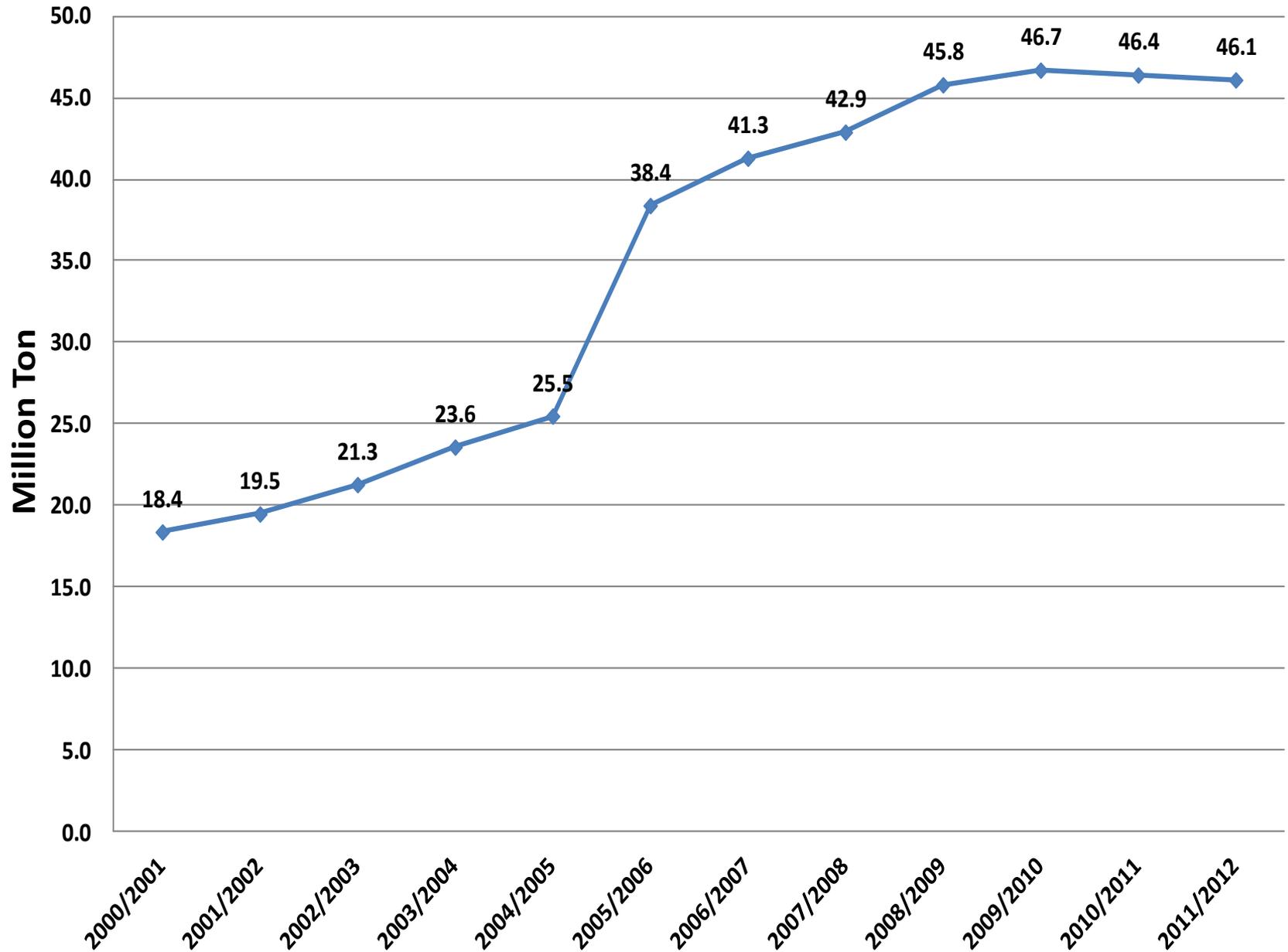
**Fig. 1.1: Petroleum Primary Production
(2000/2001-2011/2012)**



1.2 NATURAL GAS

- **Production of natural gas in Egypt has jumped from 18.4 MT in 2000/20001 to 46.1 MT in 2011/2012.**
- **This evolution by an average annual growth rate of about 8% reflects the high growth of reserves and discoveries.**

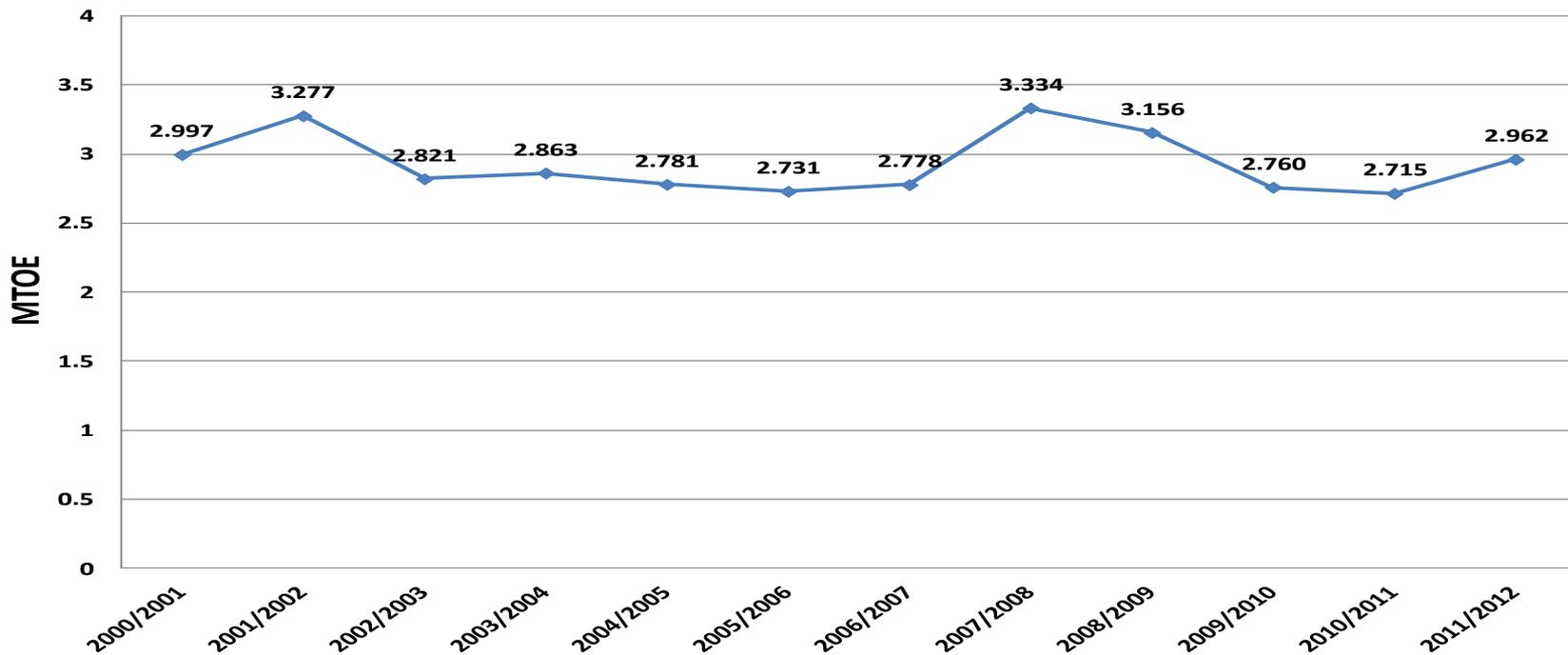
**Fig. 1.2: Natural Gas Primary Production
(2000/2001-2011/2012)**



1.3 HYDROPOWER

- The hydropower production is estimated to be 2.997 MTOE in 2000/2001 and 2.962 MTOE in 2011/2012.
- Most of the available hydropower energy resources in Egypt were exploited, the share of hydropower in the primary energy production is limited 3.3%.

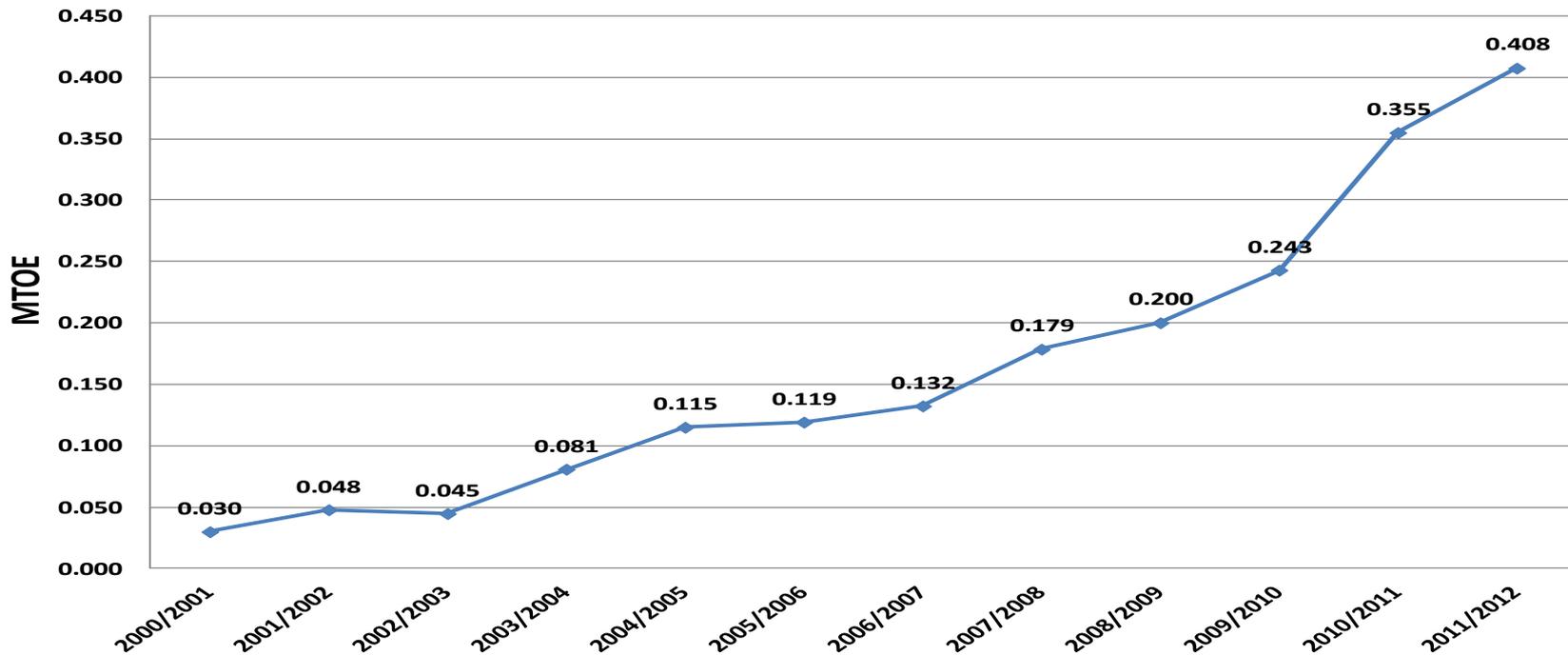
Fig. 1.3: Hydropower Primary Production (2000/2001-2011/2012)



1.4 RENEWABLES

- The share of renewables in the total primary energy production has increased by 10 times during the last 12 years. However, it still represents only 0.5% of the primary production.
- The renewable production is about 0.03 MTOE in 2000/2001 and 0.408 MTOE in 2011/2012.

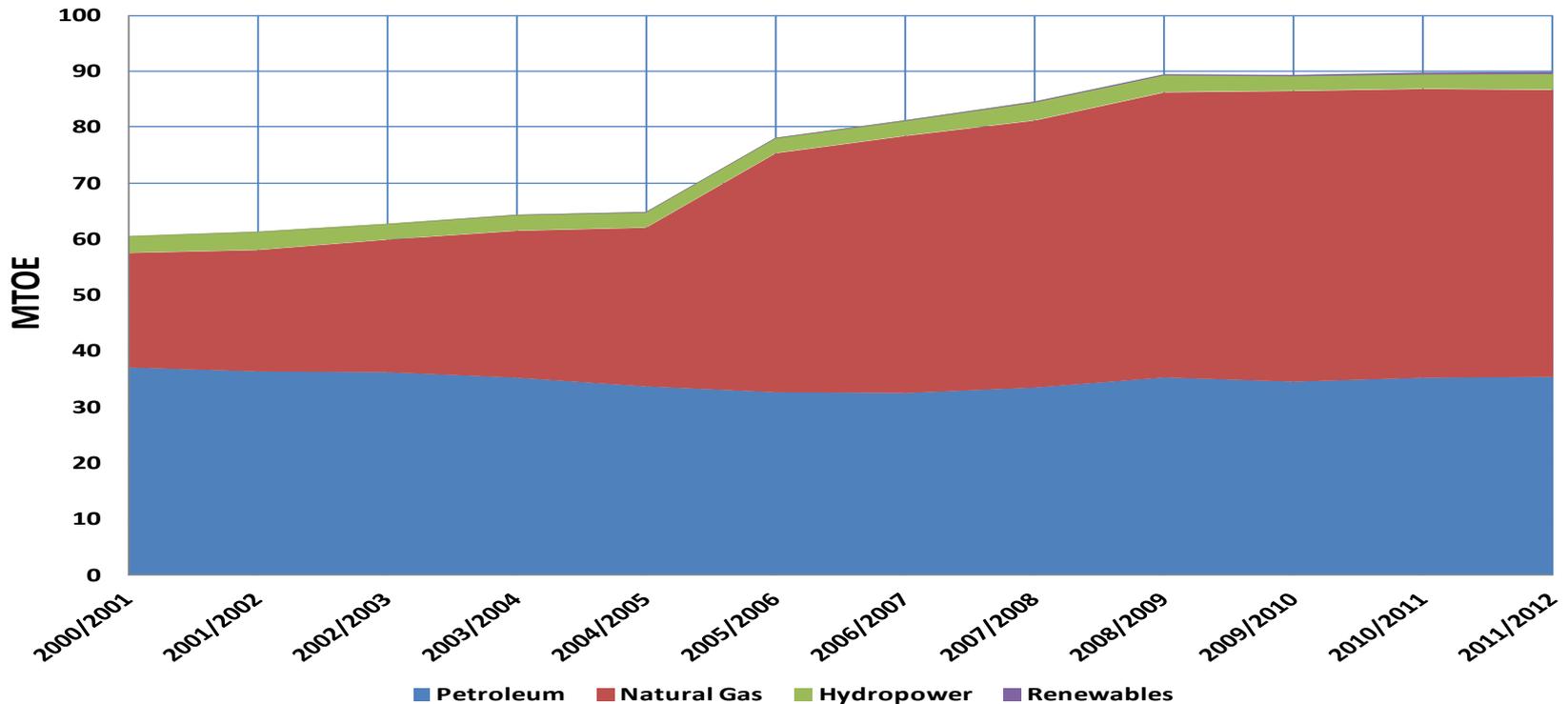
Fig. 1.4: Renewables Primary Production (2000/2001-2011/2012)



1.5 TOTAL PRIMARY ENERGY PRODUCTION

- The total primary energy production (petroleum, natural gas, hydropower and renewables) was about 60.5 MTOE in 2000/2001, increased to 90 MTOE in 2011/2012. It encounters an average annual growth rate of approximately 3.4%.

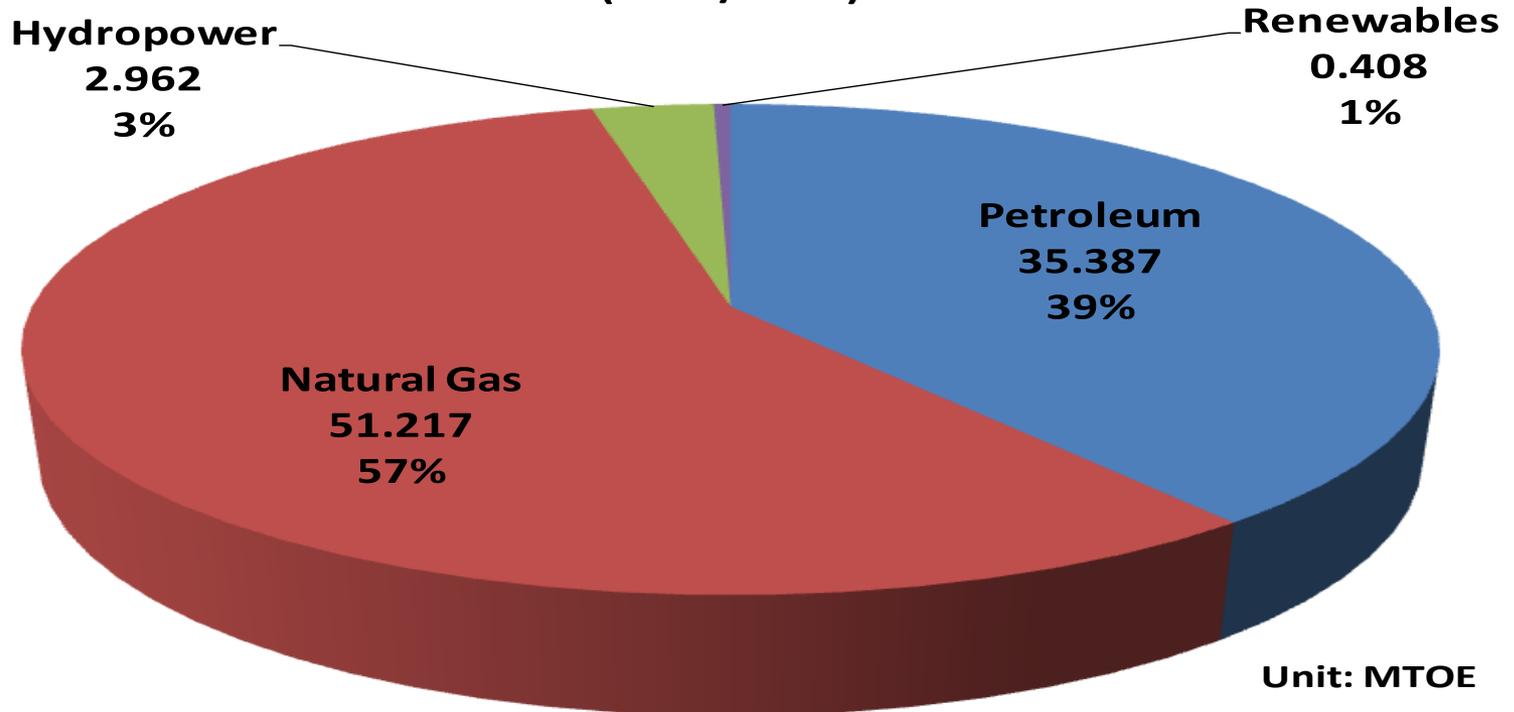
Fig. 1.5: Total Primary Energy Production (2000/2001-2011/2012)



1.5 TOTAL PRIMARY ENERGY PRODUCTION (cont.)

- Natural gas becomes the major energy source in Egypt. Its production represents 57% of the total production. Petroleum comes second 39%, hydropower 3% and finally renewables 0.5%.

Fig. 1.6: Primary Energy Production Pattern (2011/2012)



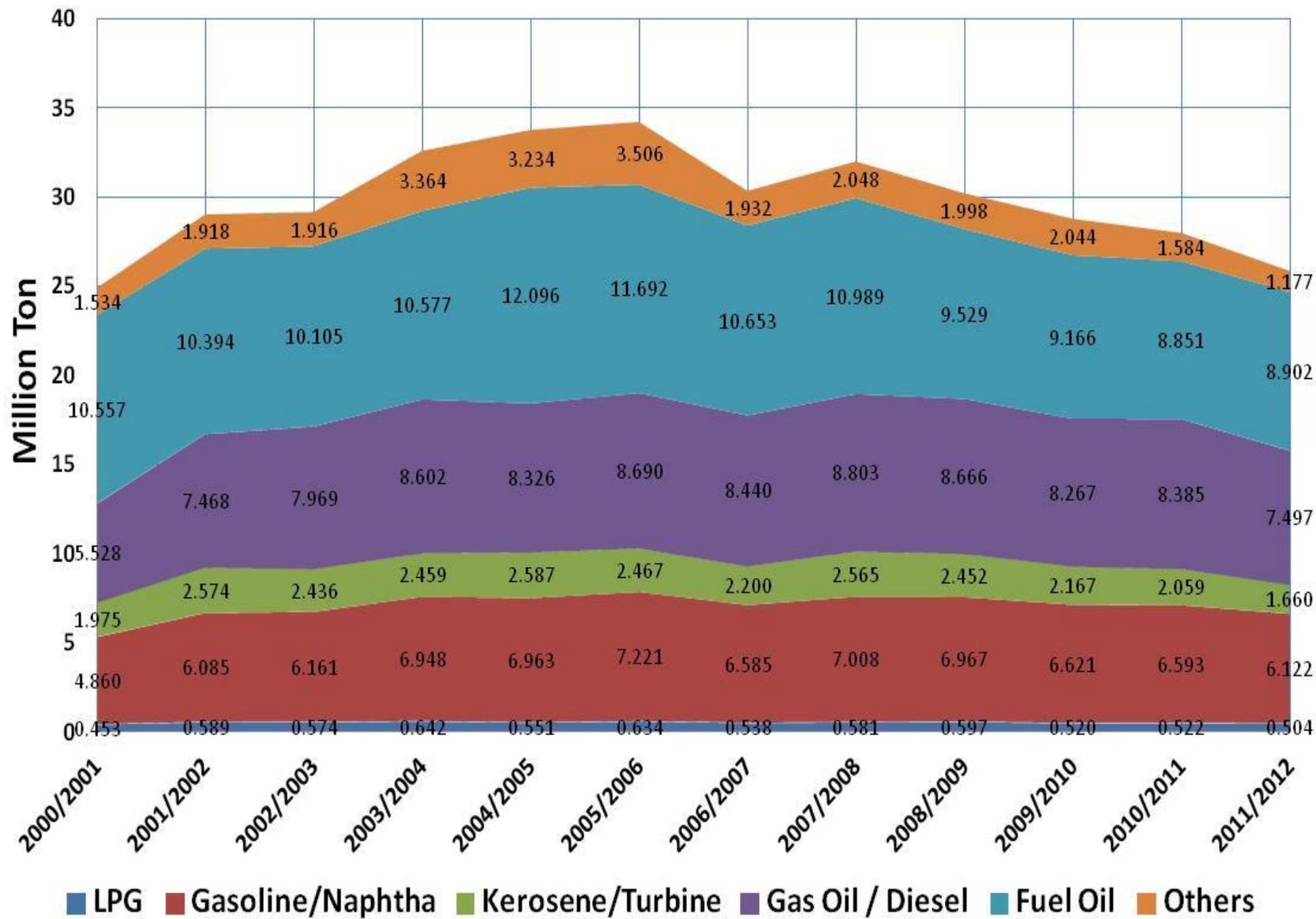
Total: 89.973 MTOE

2. Evolution of Secondary Energy Production

2.1 PETROLEUM PRODUCTS

- Oil throughput in the Egyptian refineries amounts for 26.9 MT in 2011/2012.**
- Total production of petroleum products increased from 24.9 MT in 2000/2001 to 25.9 MT in 2011/2012.**

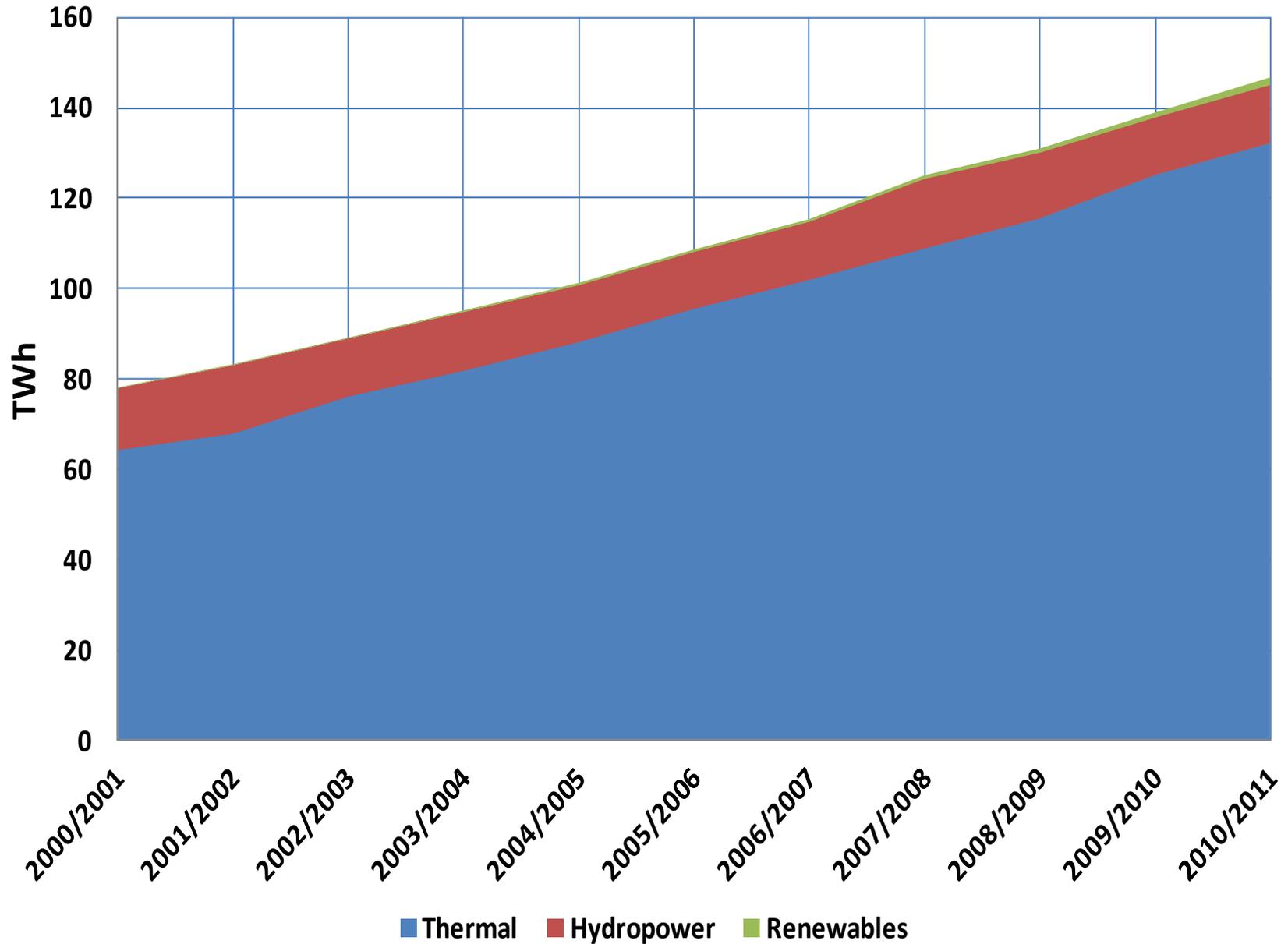
**Fig. 2.1: Petroleum Products Production
(2000/2001-2011/2012)**



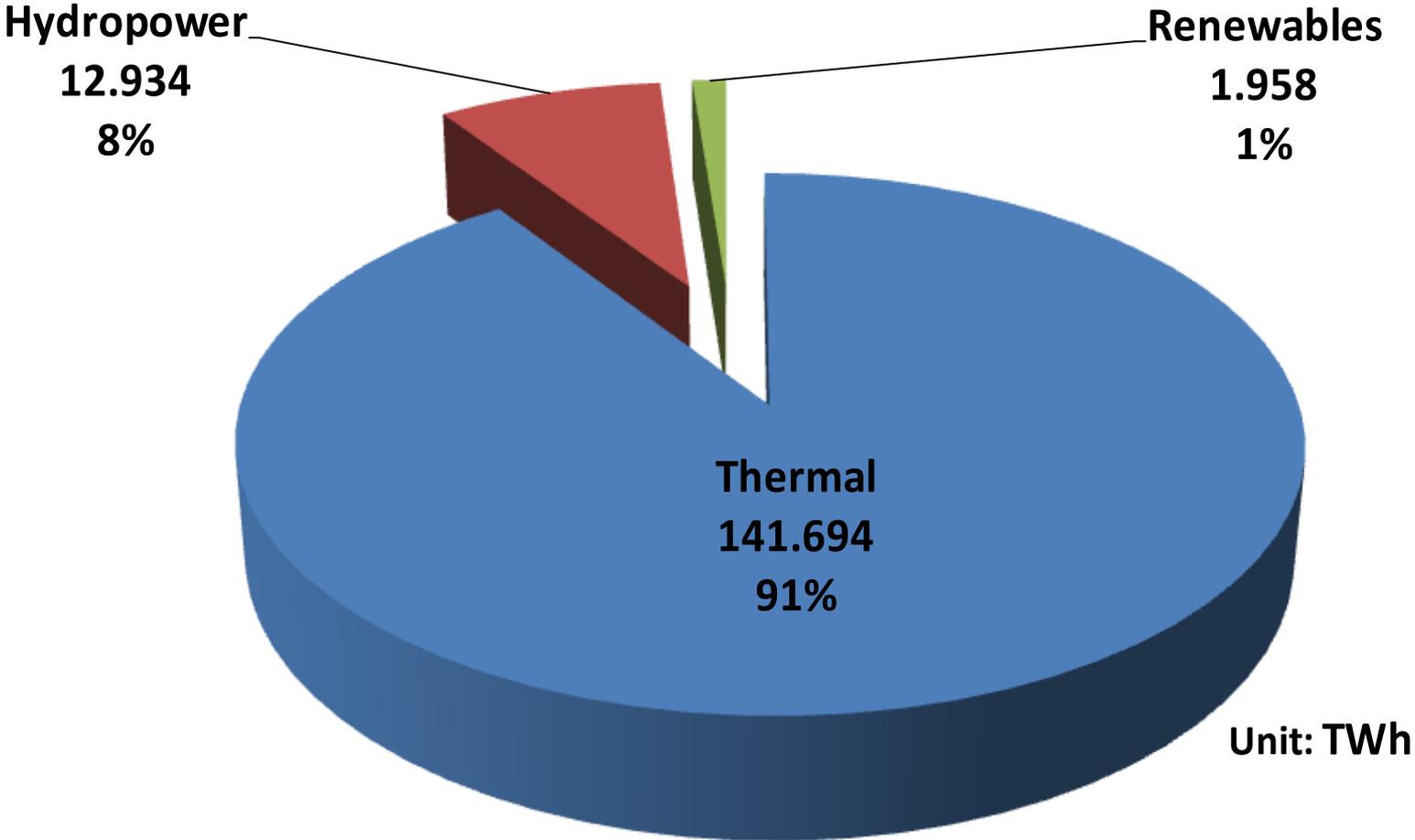
2.2 ELECTRICITY

- **Electricity generation increased from 78.1 TWh in 2000/2001 to 156.6 TWh in 2011/2012 (6% yearly).**
- **Electricity generated by thermal power stations amplified from about 64.3 TWh in 2000/2001 to 141.7 TWh in 2010/2011.**
- **Electricity generated from hydropower is slightly decreased from 13.7 TWh to 12.9 TWh.**
- **In addition to 0.137 TWh generated by renewables in 2000/2001 boosted to 1.958 TWh in 2011/2012.**

**Fig. 2.2: Electricity Generation
(2000/2001-2011/2012)**



**Fig. 2.3: Electricity Generation Pattern
(2011/2012)**



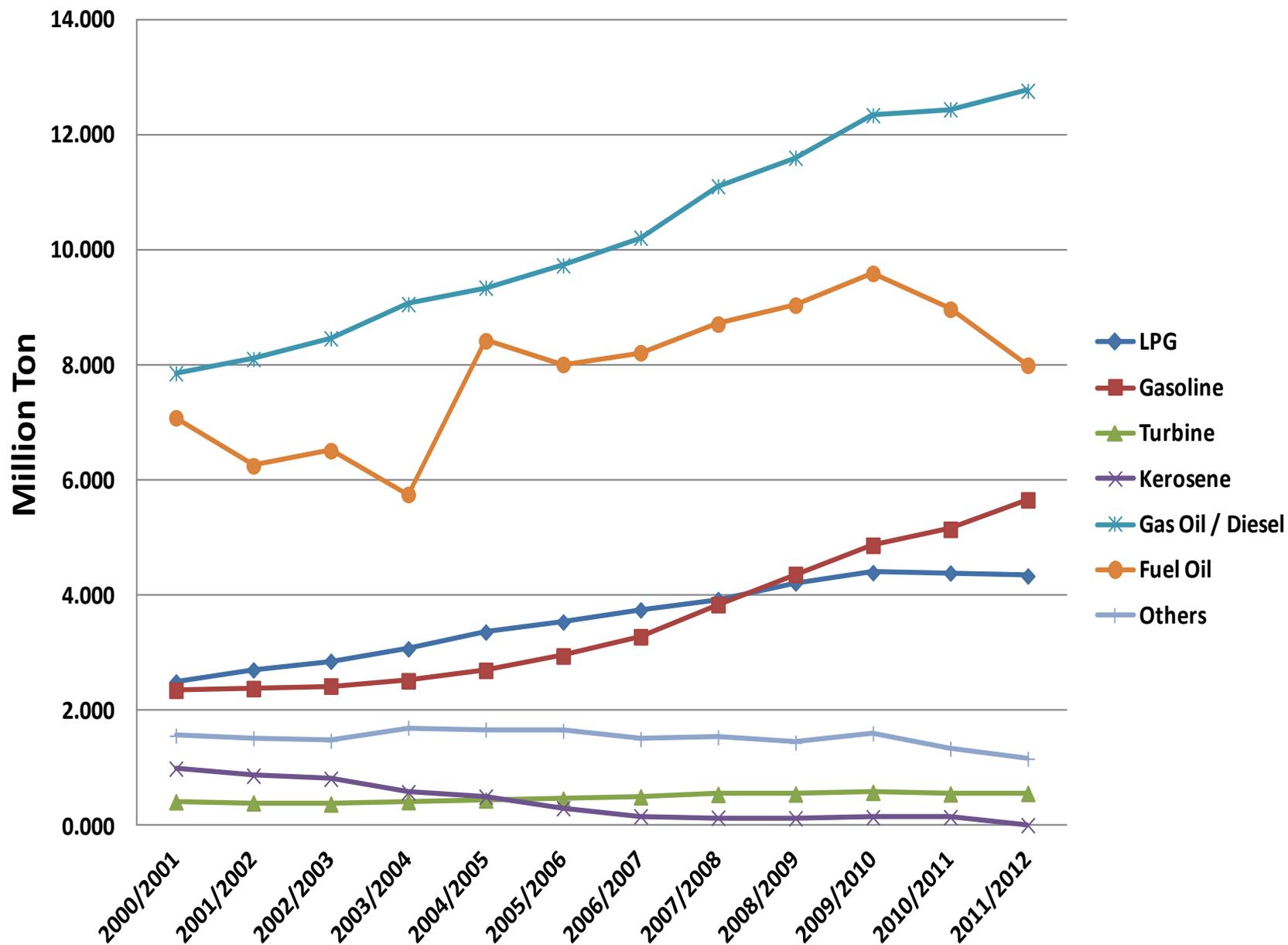
Total 156.586 TWh

3. Evolution of Energy Use

3.1 PETROLEUM PRODUCTS

- Petroleum products use has increased by about 3% per year.**
- The total consumption increased from 22.8 MT in 2000/2001 to 32.5 MT in 2011/2012.**
- Out of the total consumption in 2011/2012, there is 8.6 MT imported.**
- On the other side, the country exported 3.25 MT of different petroleum products.**

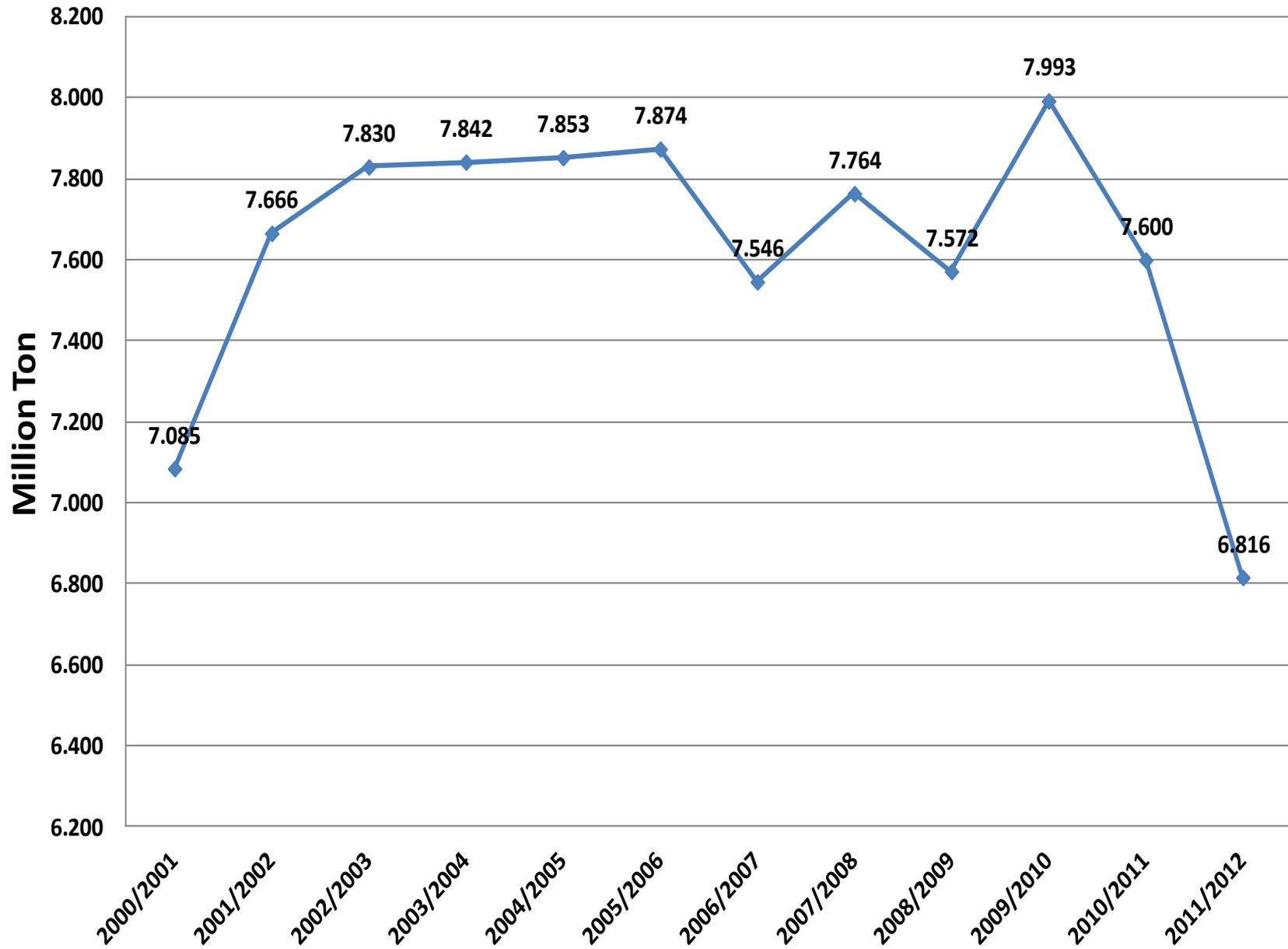
Fig. 3.1: Petroleum Products Consumption (2000/2001-2011/2012)



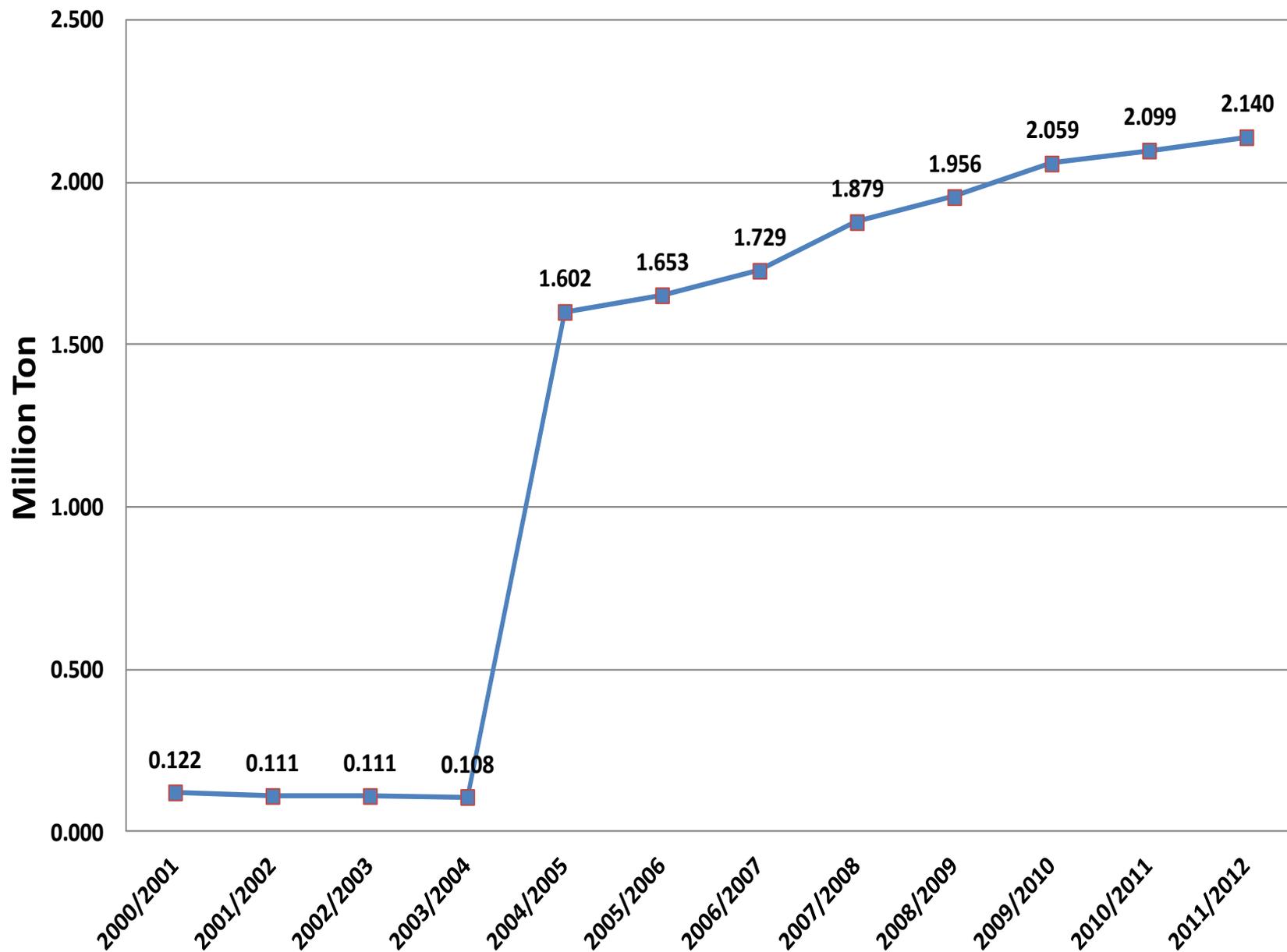
3.1 PETROLEUM PRODUCTS (cont.)

- **The consumption of gasoline has increased by 7.6%/year.**
- **LPG and gas oil increased by 4.7% and 4.1% respectively.**
- **The use of kerosene is vanishing because of the near saturation of the LPG or natural gas cookers.**

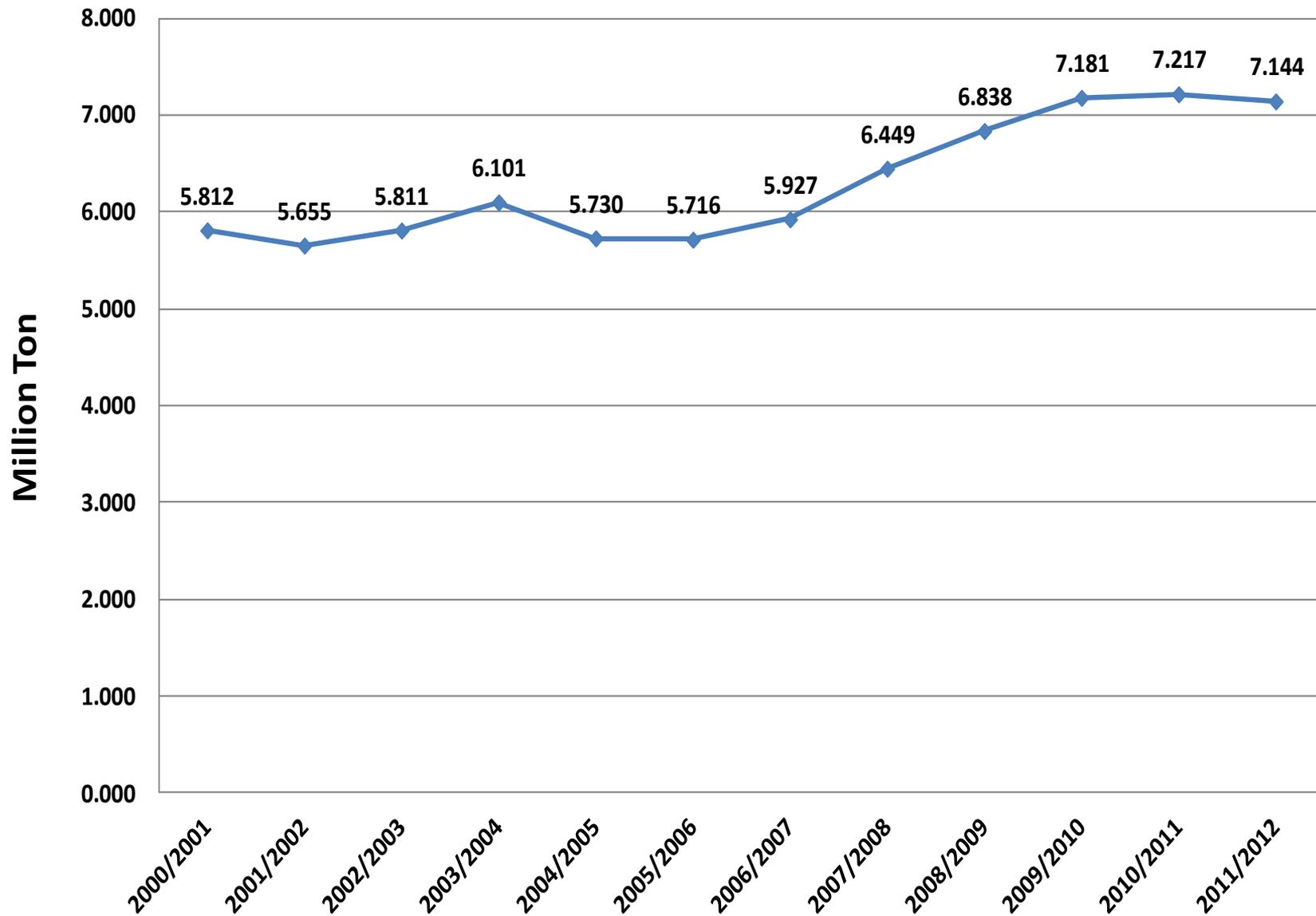
**Fig. 3.2: Industry Petroleum Products Consumption
(2000/2001-2011/2012)**



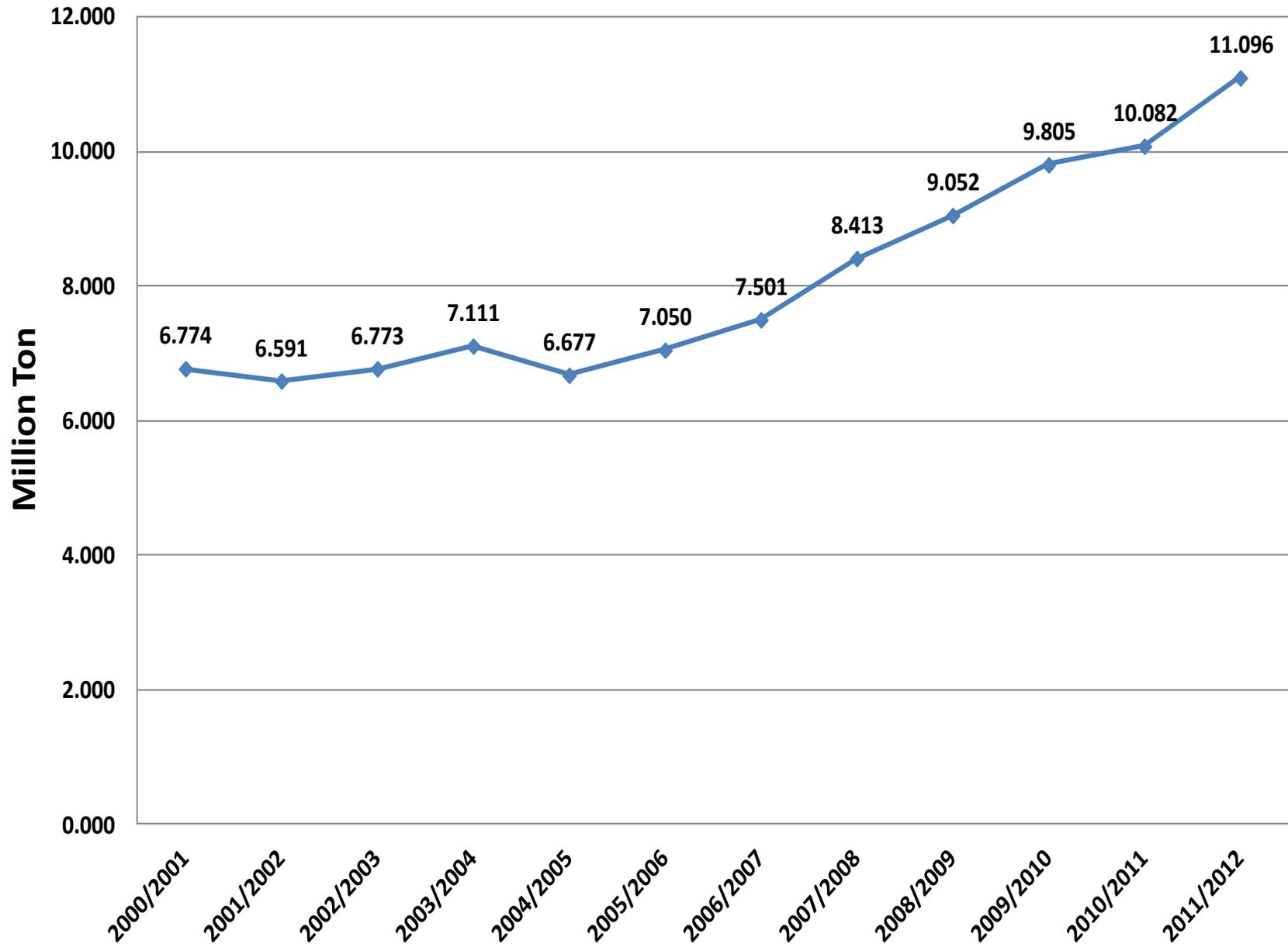
**Fig. 3.3: Agriculture Petroleum Products Consumption
(2000/2001-2011/2012)**



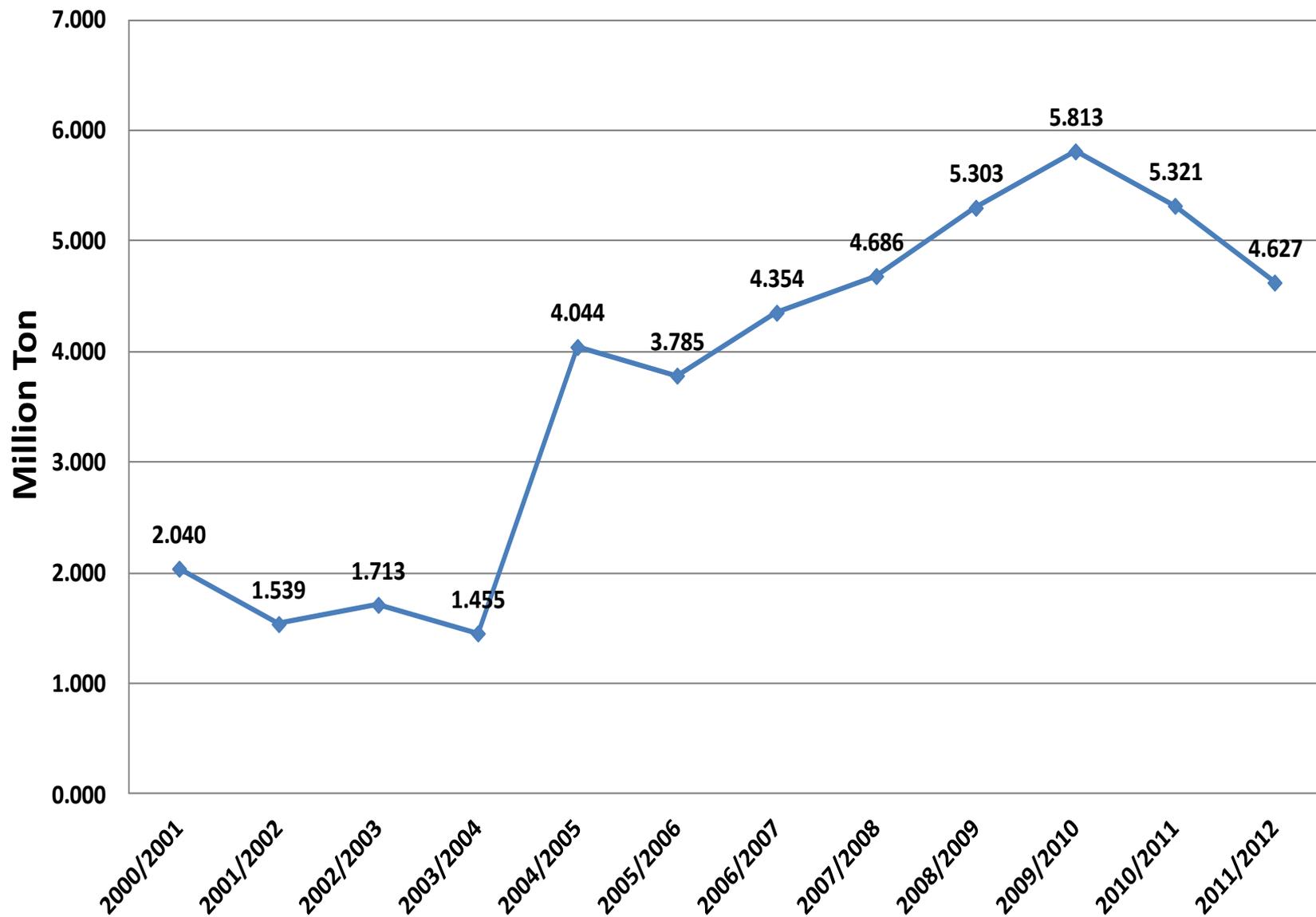
**Fig. 3.4: Residential and Commercial
Petroleum Products Consumption
(2000/2001-2011/2012)**



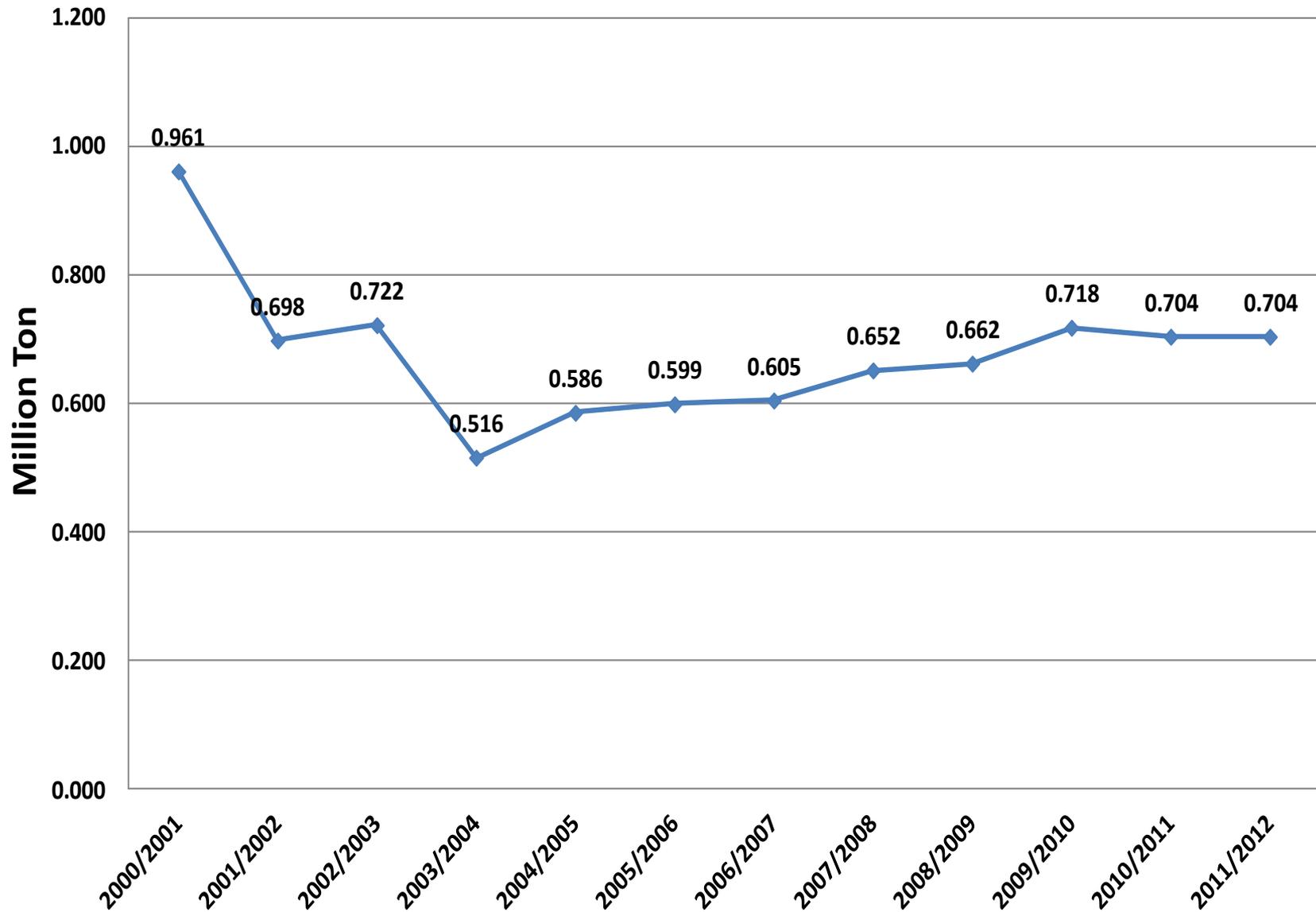
**Fig. 3.5: Transport Petroleum Products Consumption
(2000/2001-2011/2012)**



**Fig. 3.6: Petroleum Products Consumption
in Electricity Sector
(2000/2001-2011/2012)**



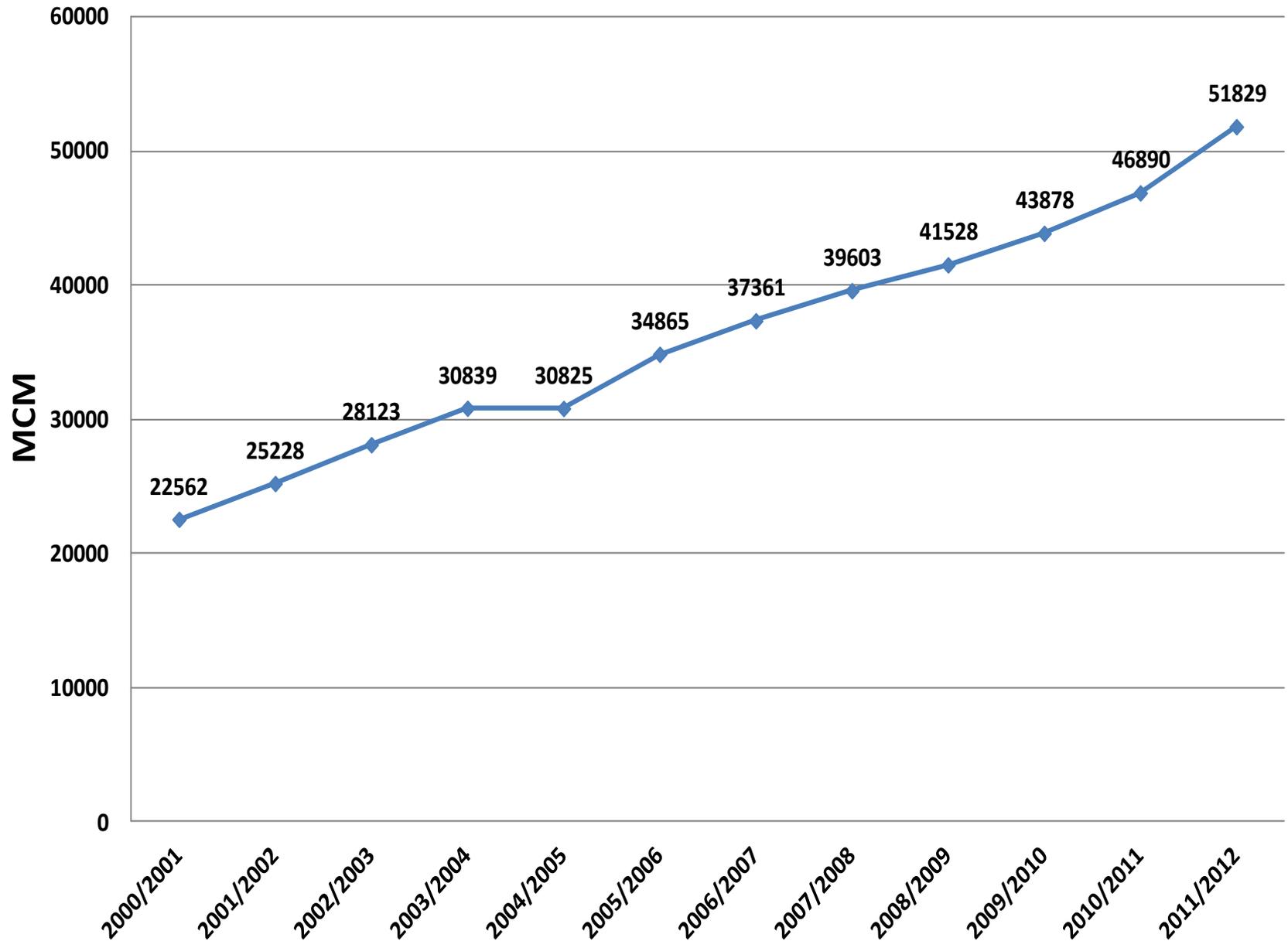
**Fig. 3.7: Petroleum Products Consumption
in Petroleum Sector
(2000/2001-2011/2012)**



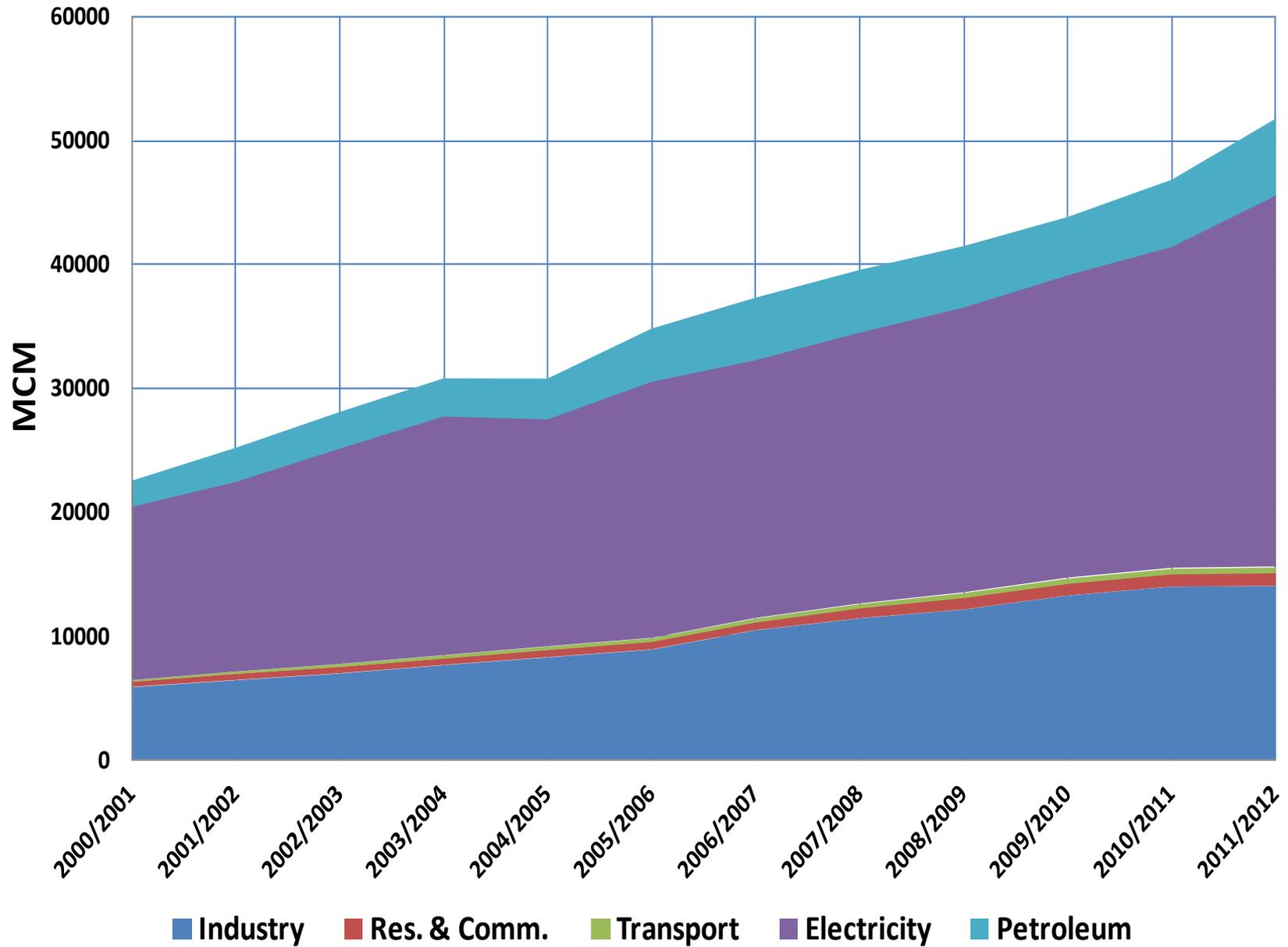
3.2 NATURAL GAS

- **The use of the natural gas has increased by about 7% per annum.**
- **The total consumption increased from 22.65 BCM 2000/2001 to 51.8 BCM in 2011/2012.**

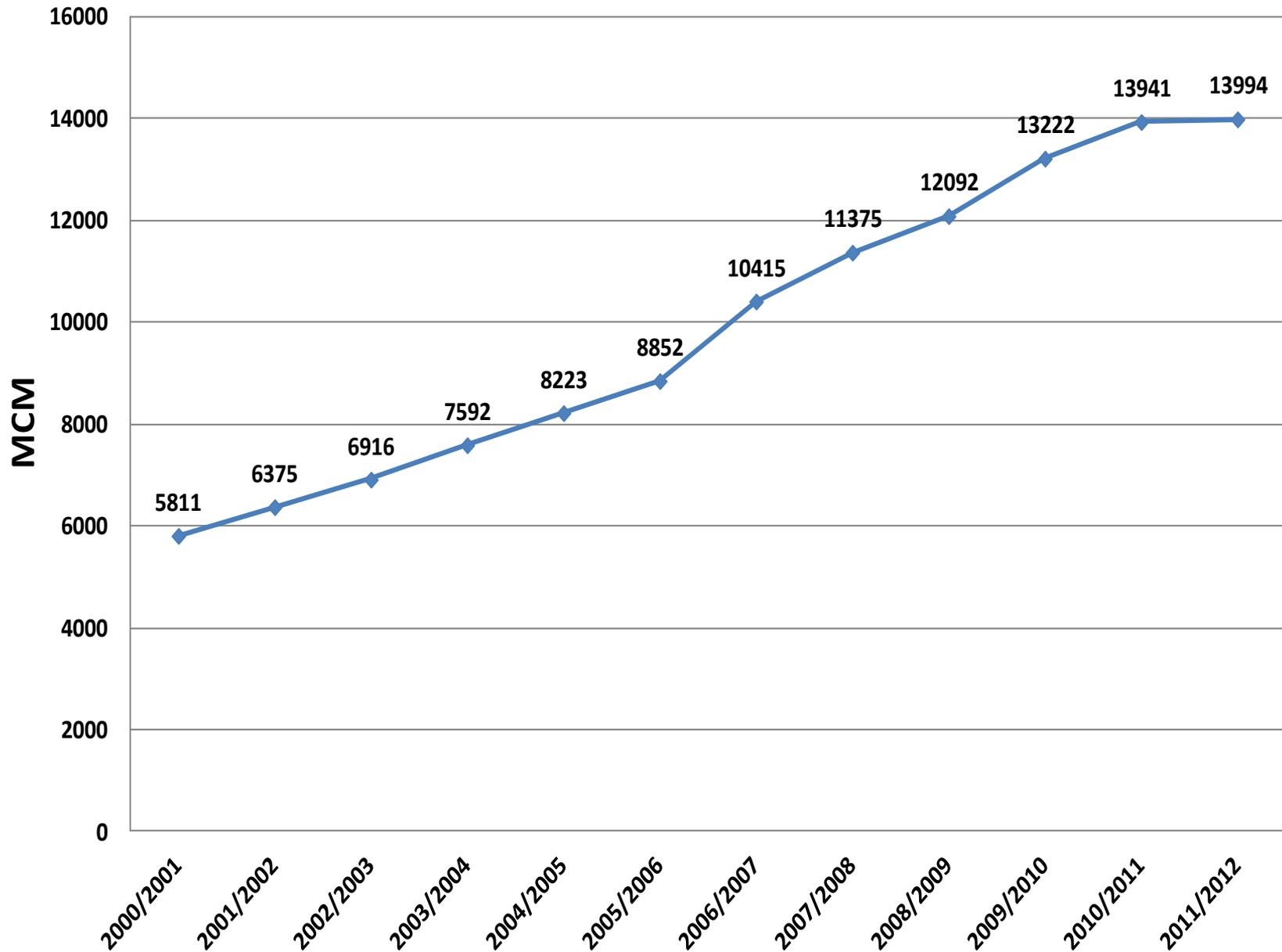
**Fig. 3.8: Natural Gas Total Consumption
(2000/2001-2011/2012)**



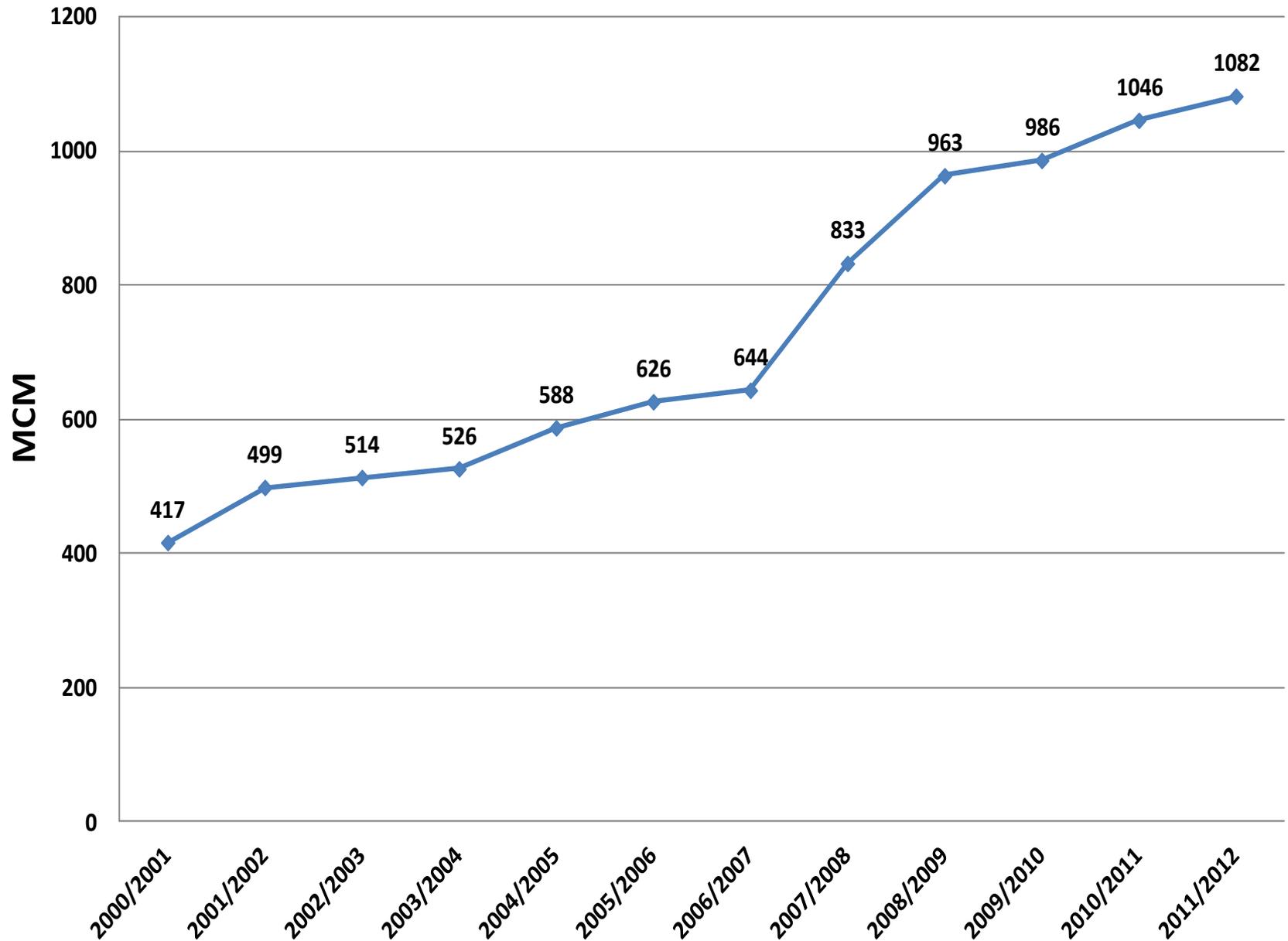
**Fig. 3.9: Natural Gas Sectoral Consumption
(2000/2001-2011/2012)**



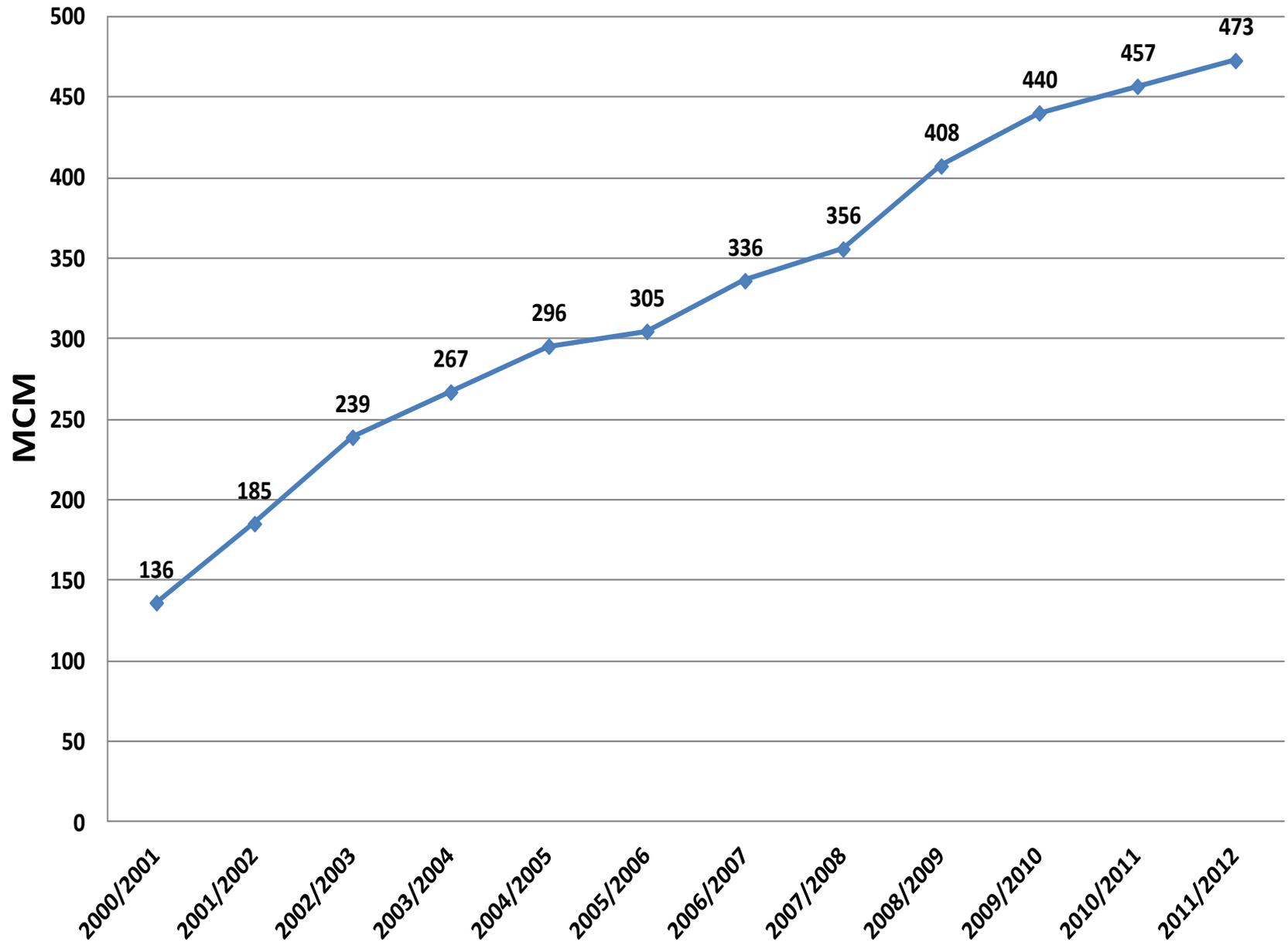
**Fig. 3.10: Natural Gas Consumption in Industry
(2000/2001-2011/2012)**



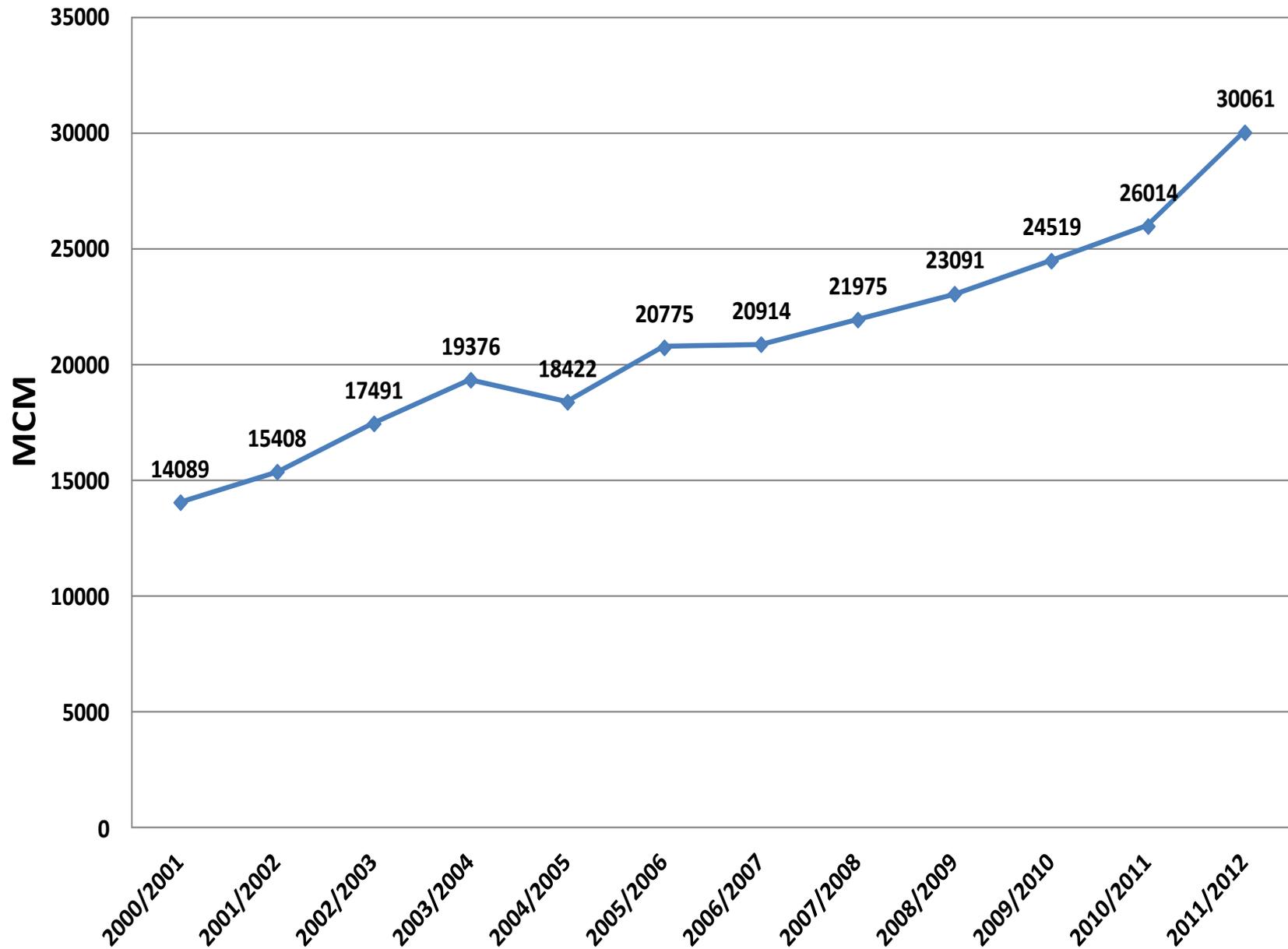
**Fig. 3.11: Natural Gas Consumption in Residential and Commercial
(2000/2001-2011/2012)**



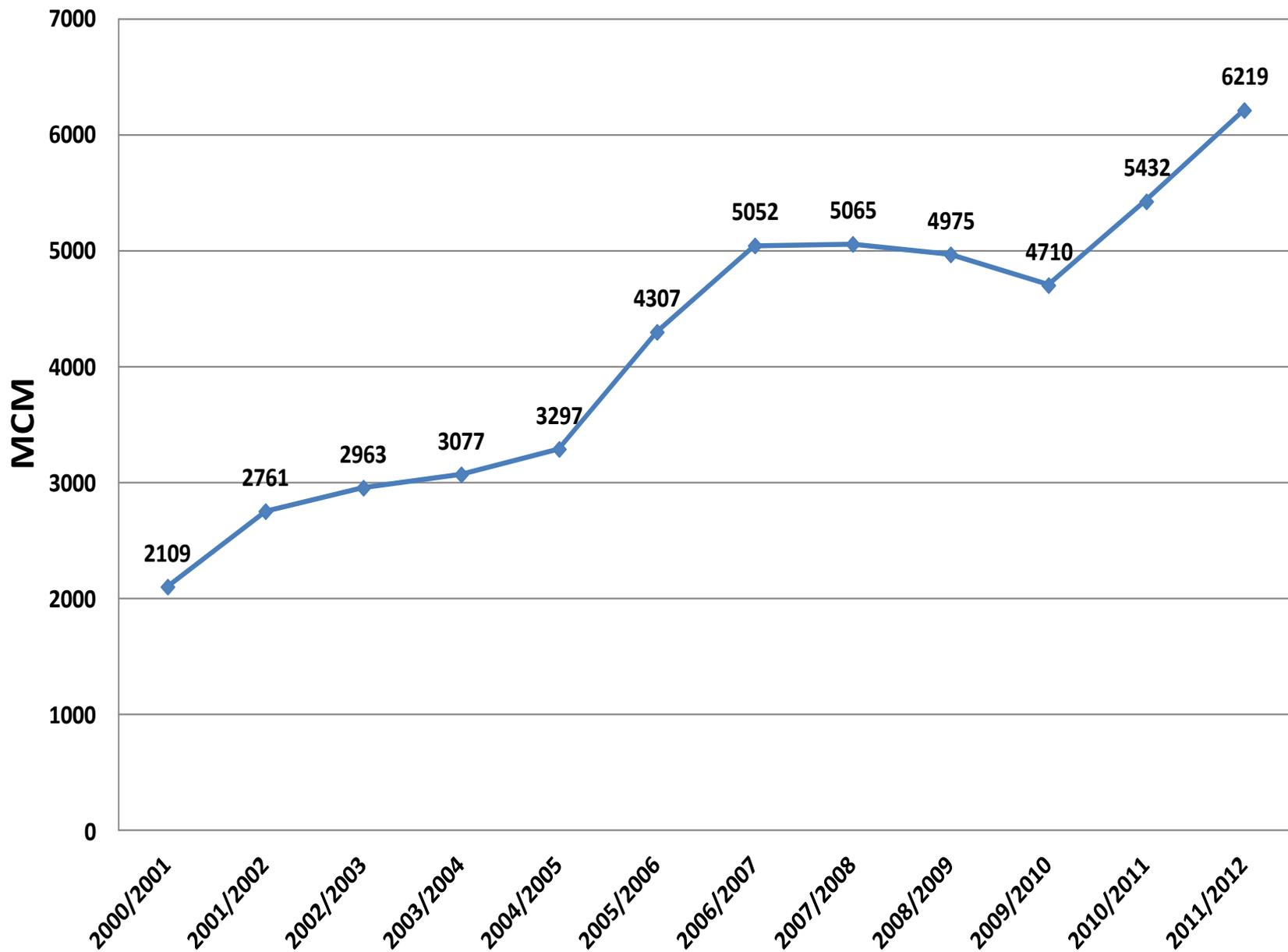
**Fig. 3.12: Natural Gas Consumption in Transport
(2000/2001-2011/2012)**



**Fig. 3.13: Natural Gas Consumption in Electricity
(2000/2001-2011/2012)**



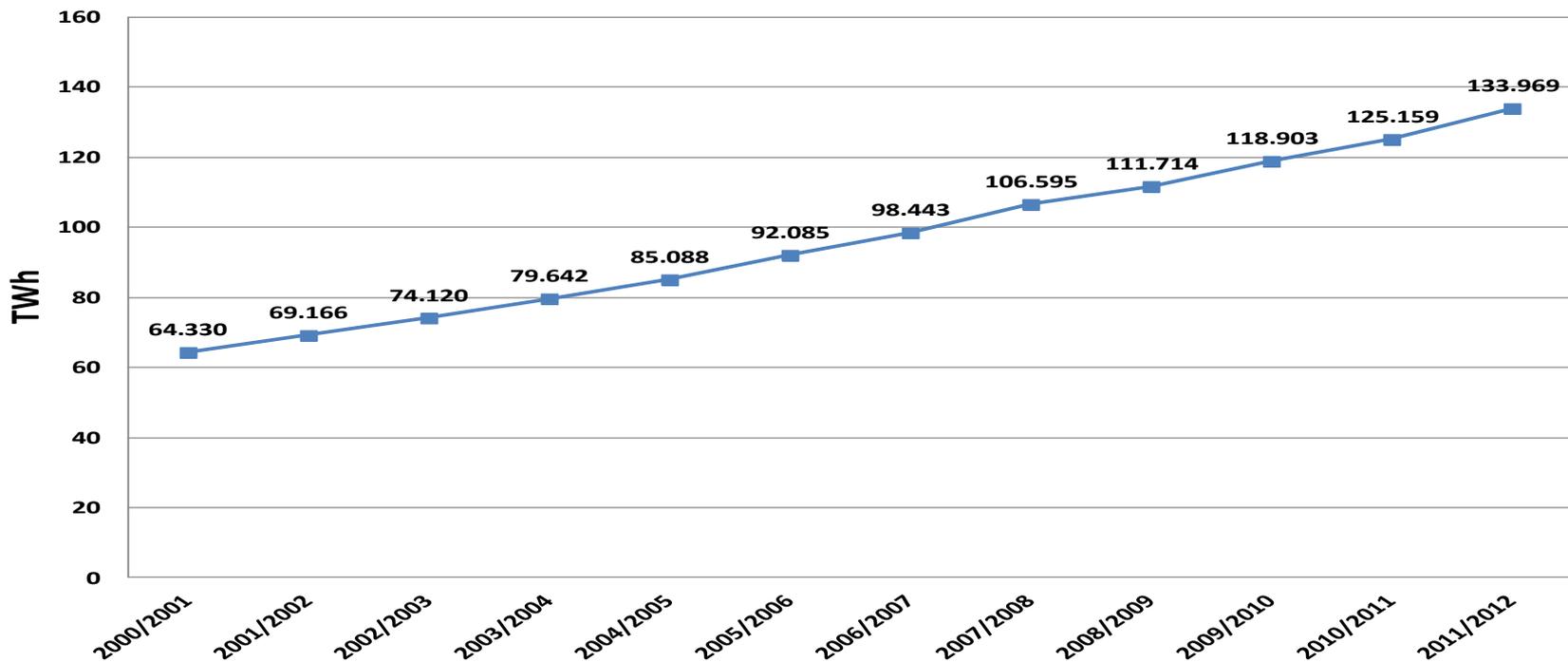
**Fig. 3.14: Natural Gas Consumption in Petroleum Sector
(2000/2001-2011/2012)**



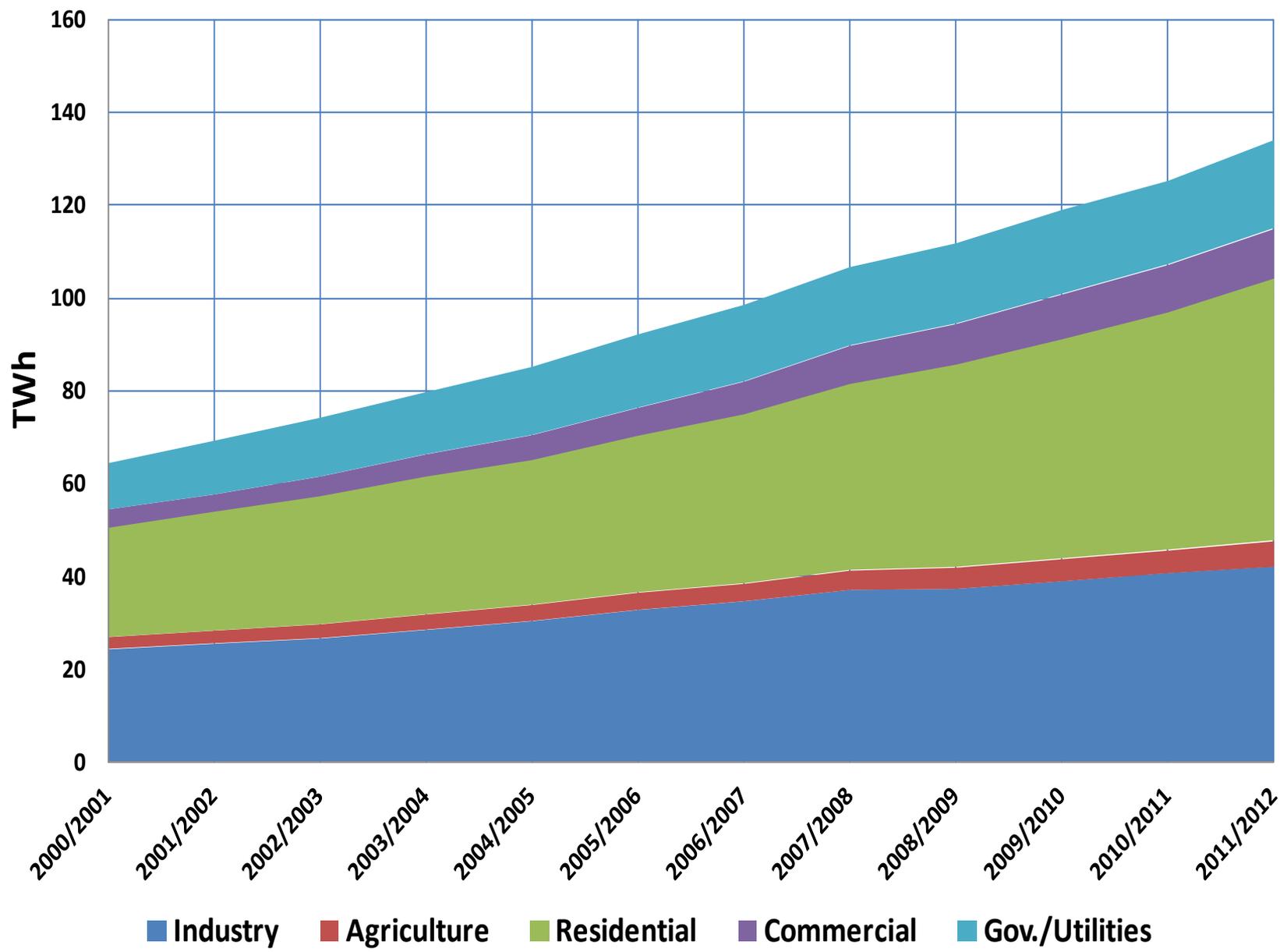
3.3 ELECTRICITY

- Electricity total consumption has increased from about 64 TWh in 2000/2001 to 134 TWh in 2011/2012, having an average annual growth rate of 6.3 per cent.

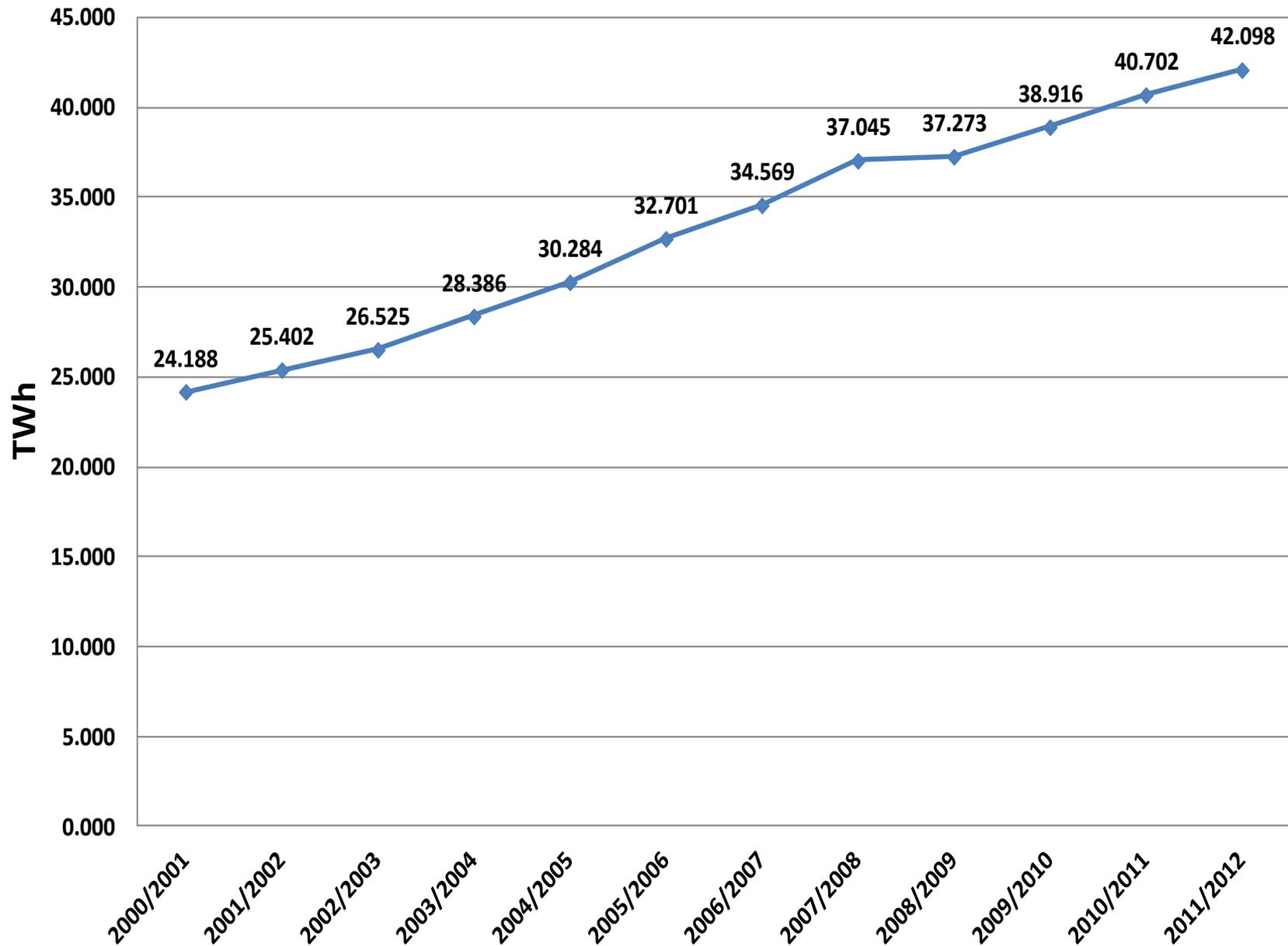
**Fig. 3.15: Electricity Total Consumption
(2000/2001-2011/2012)**



**Fig. 3.16: Electricity Sectoral Consumption
(2000/2001-2011/2012)**



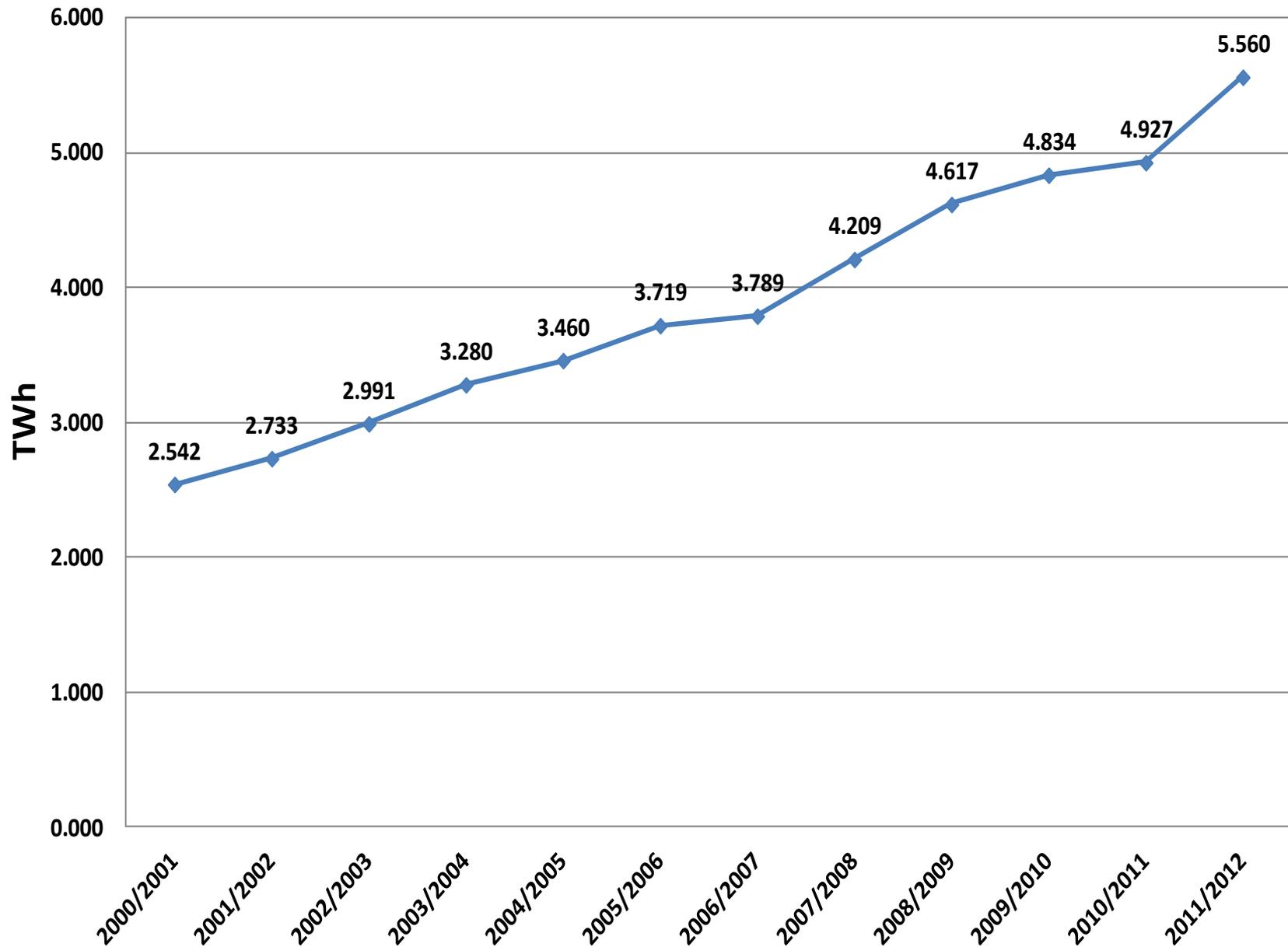
**Fig. 3.17: Electricity Consumption in Industry
(2000/2001-2011/2012)**



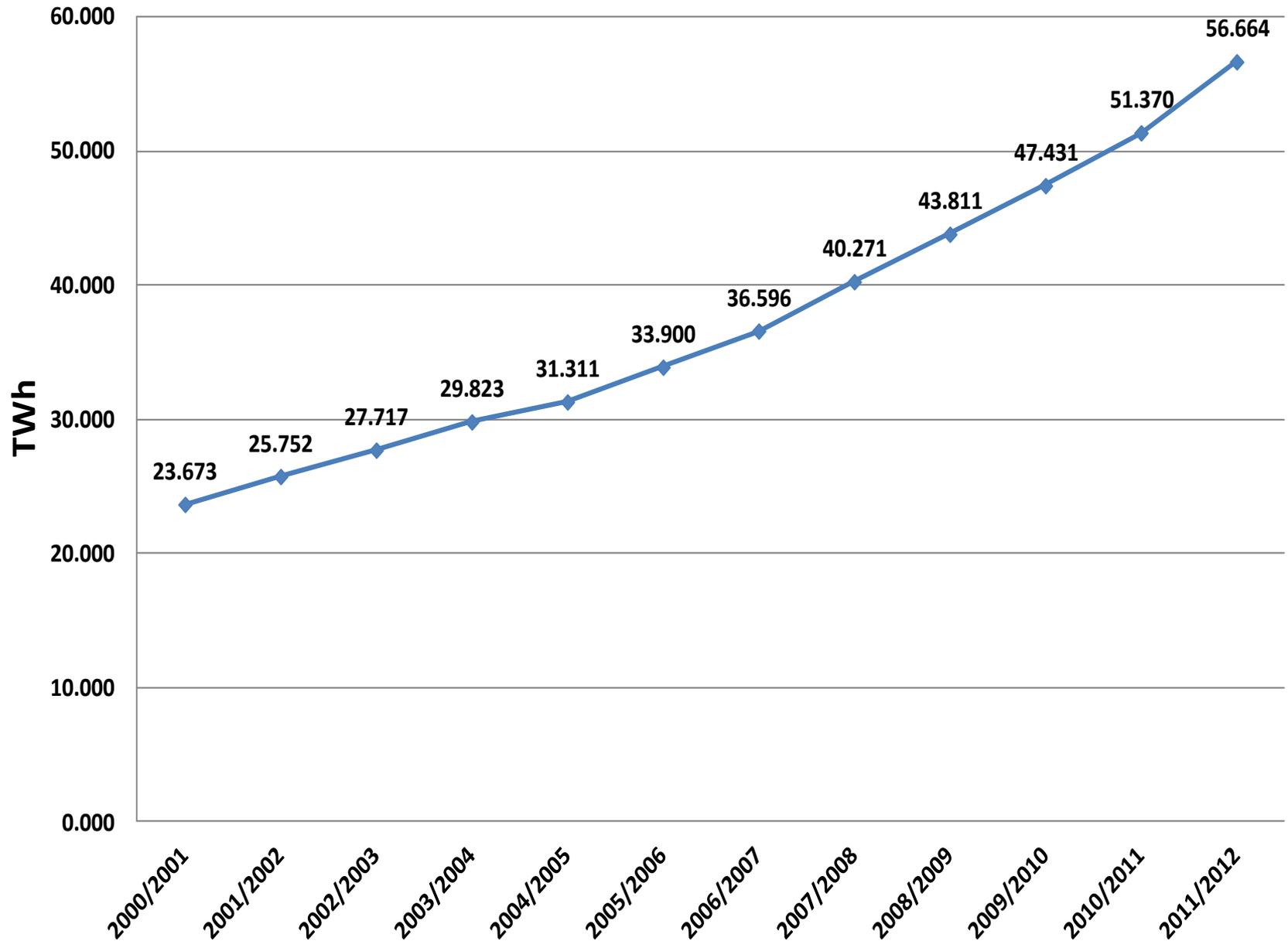
The table shows the electricity consumption of the major industry subsectors along with their shares of the industry sector total electricity consumption, assuming the same pattern as 2010/2011. Those seven major consumer subsectors represent more than 71% of the sectors total consumption.

Subsector	GWh	Share
Iron & Steel	8604.79	20.44%
Cement	6702.25	15.92%
Aluminium	6123.87	14.55%
Food	2998.10	7.12%
Textile	2383.34	5.66%
Fertilizers	1590.27	3.78%
Rubber	1529.97	3.63%

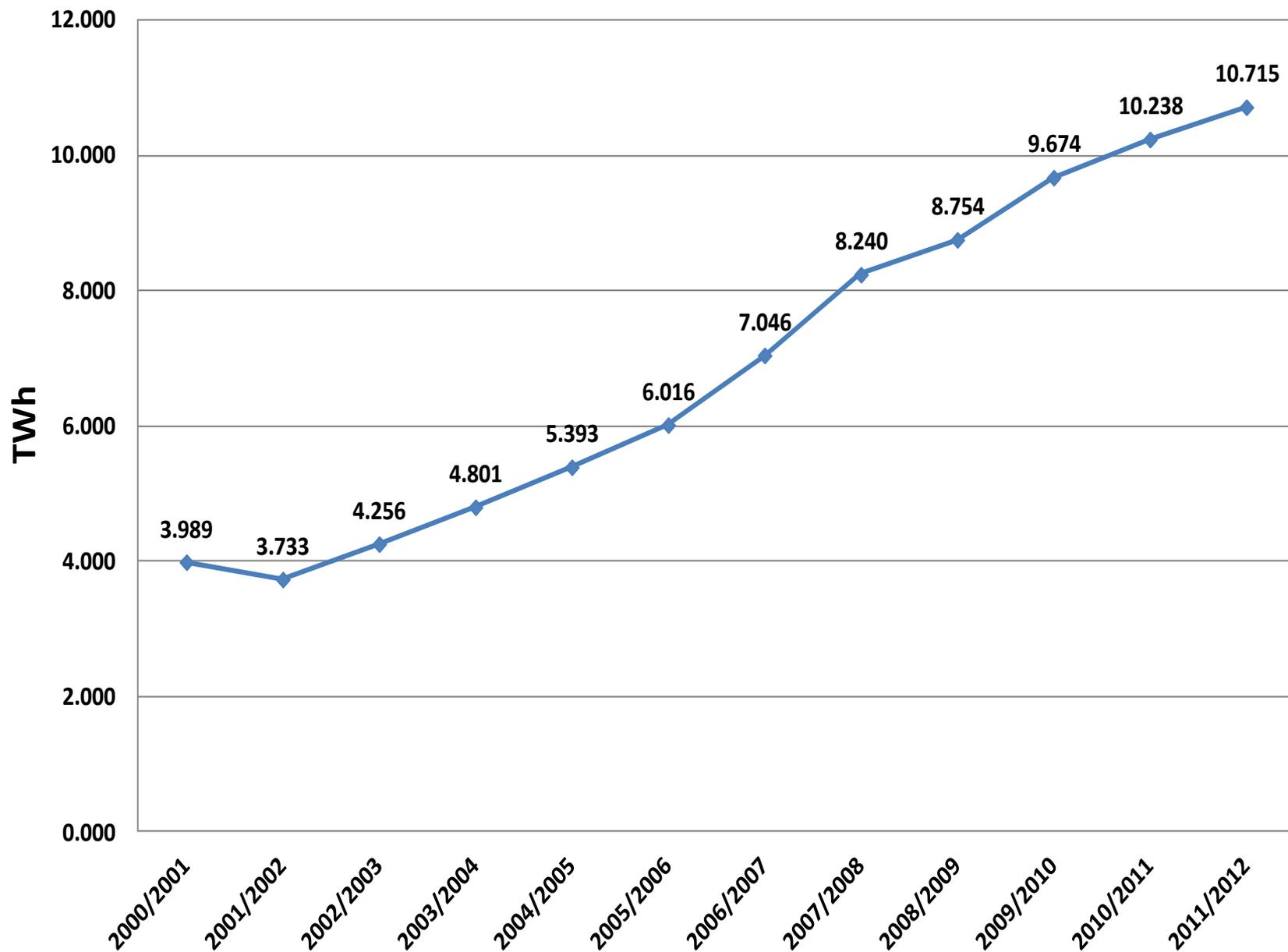
**Fig. 3.18: Electricity Consumption in Agriculture
(2000/2001-2011/2012)**



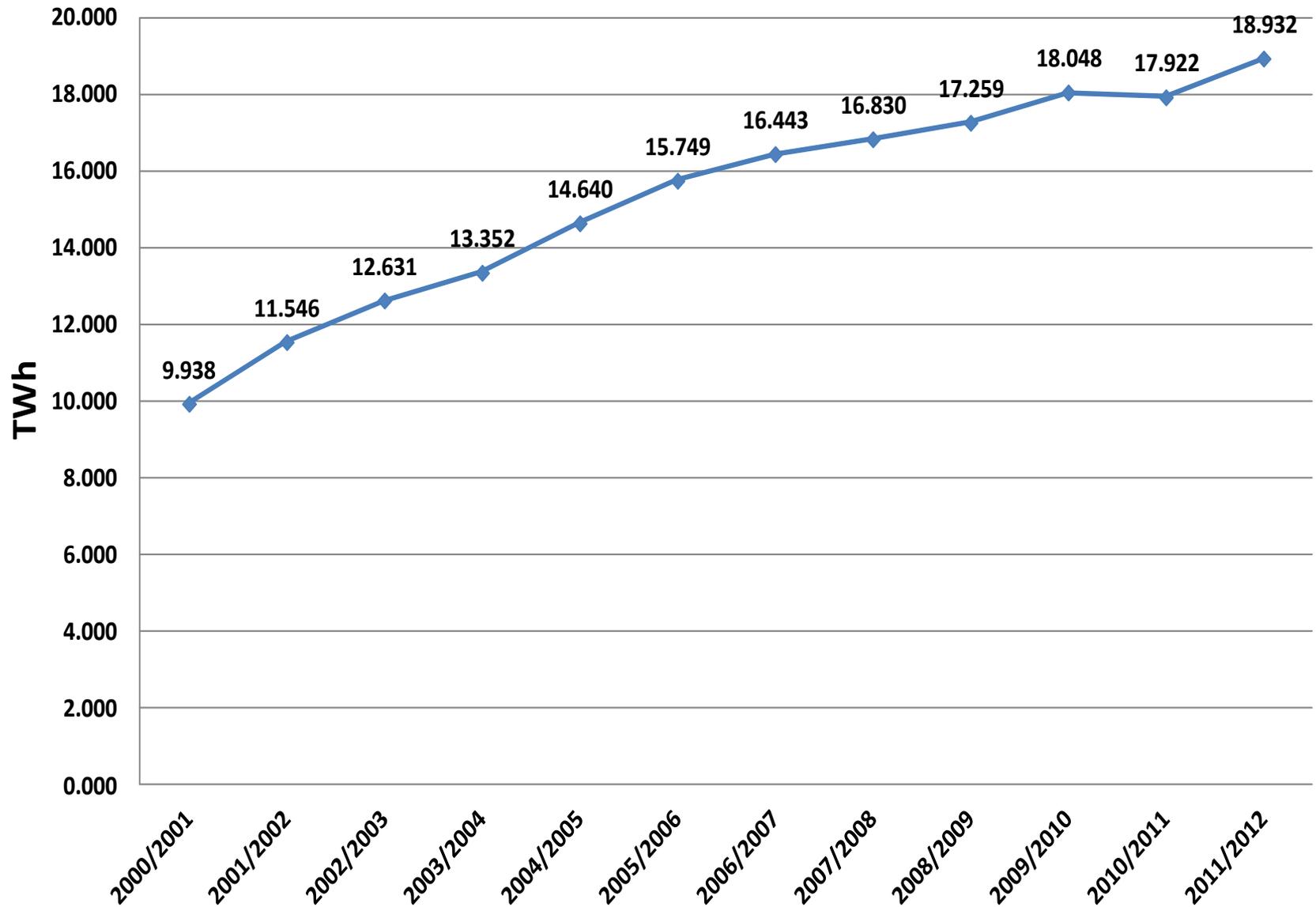
**Fig. 3.19: Electricity Consumption in the Residential Sector
(2000/2001-2011/2012)**



**Fig. 3.20: Electricity Consumption in the Commercial Sector
(2000/2001-2011/2012)**



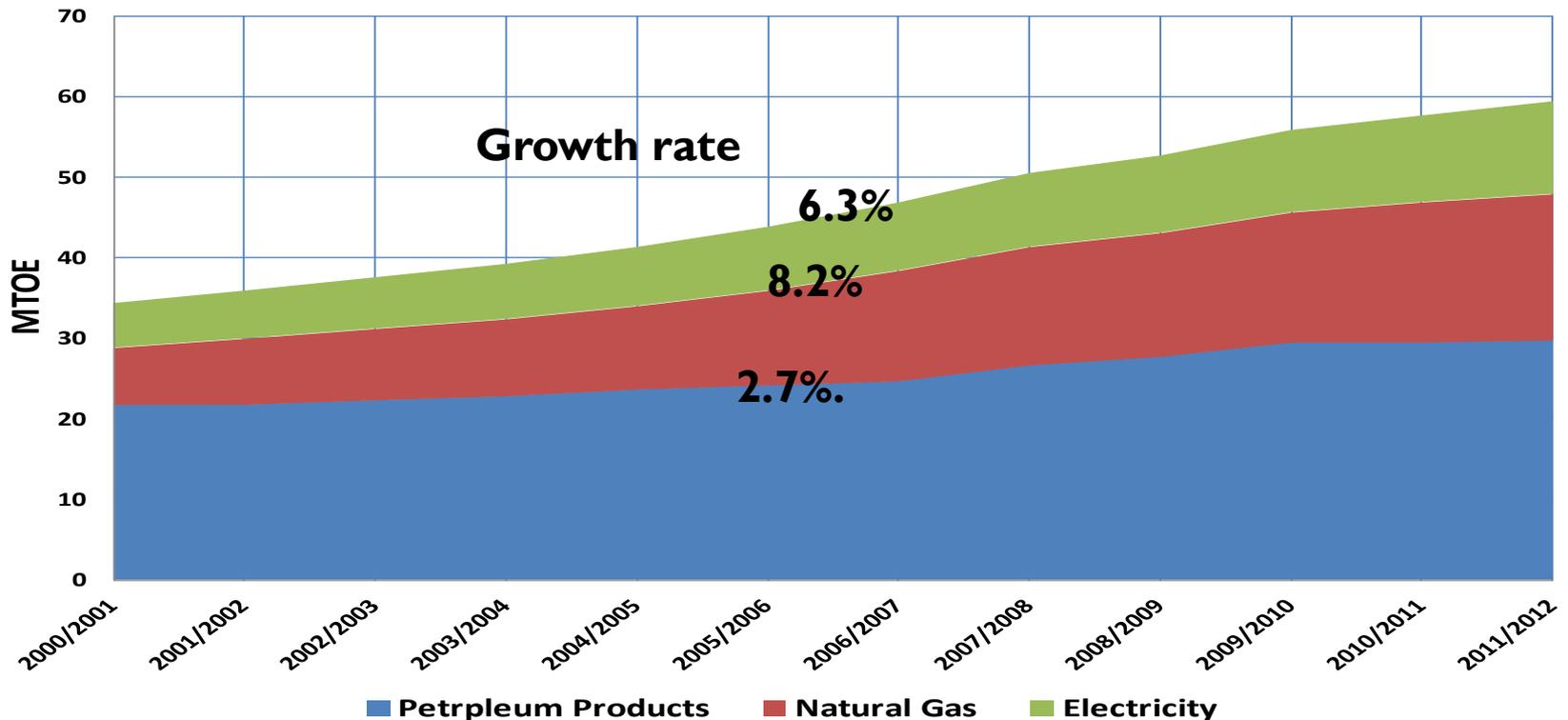
**Fig. 3.21: Electricity Consumption in the Government
and Utilities Sector
(2000/2001-2011/2012)**



3.4 TOTAL ENERGY

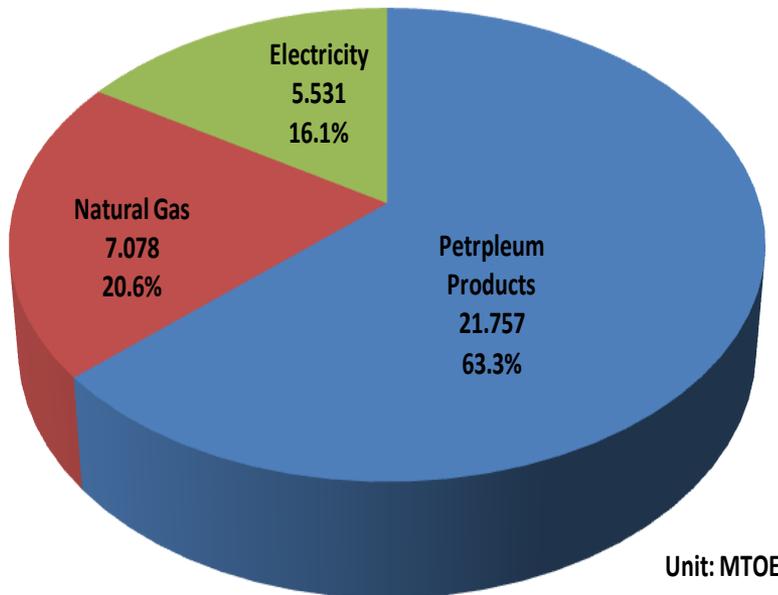
- The total final energy consumption was 34.4 MTOE in 2000/2001 increased to 59.5 MTOE in 2011/2012 (growth rate of 4.7%).

Fig. 3.22: Total Final Energy Consumption
(2000/2001 - 2011/2012)



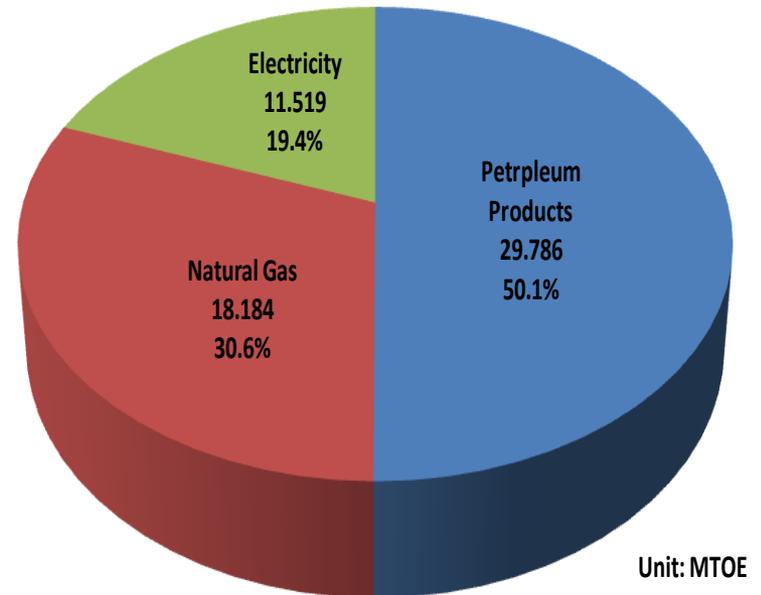
The share of petroleum products in the total final energy consumption is 63.3% in 2000/2001 and 50% in 2011/2012. Natural gas share raised from 20.6% to 30.6%. Electricity share changed from 16.1% to 19.4%

Fig. 3.23: Total Final Energy Consumption Pattern (2000/2001)



Total 34.366 MTOE

Fig. 3.24: Total Final Energy Consumption Pattern (2011/2012)



Total 59.489 MTOE

Share of each economic sector in the total final consumption in 2000/2001 and 2011/2012.

Fig. 3.26: Sectoral Final Energy Consumption Pattern (2000/2001)

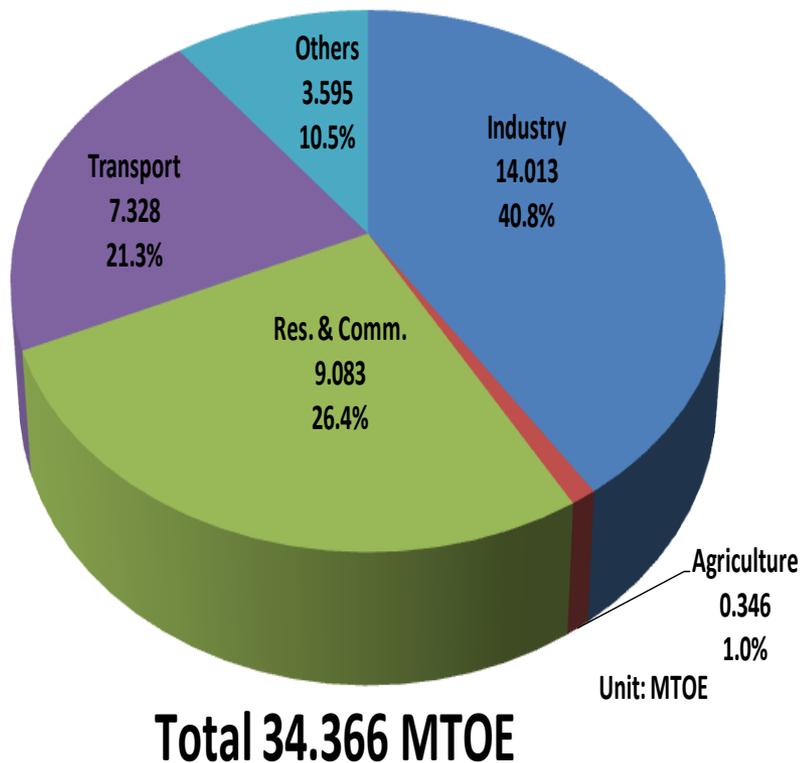
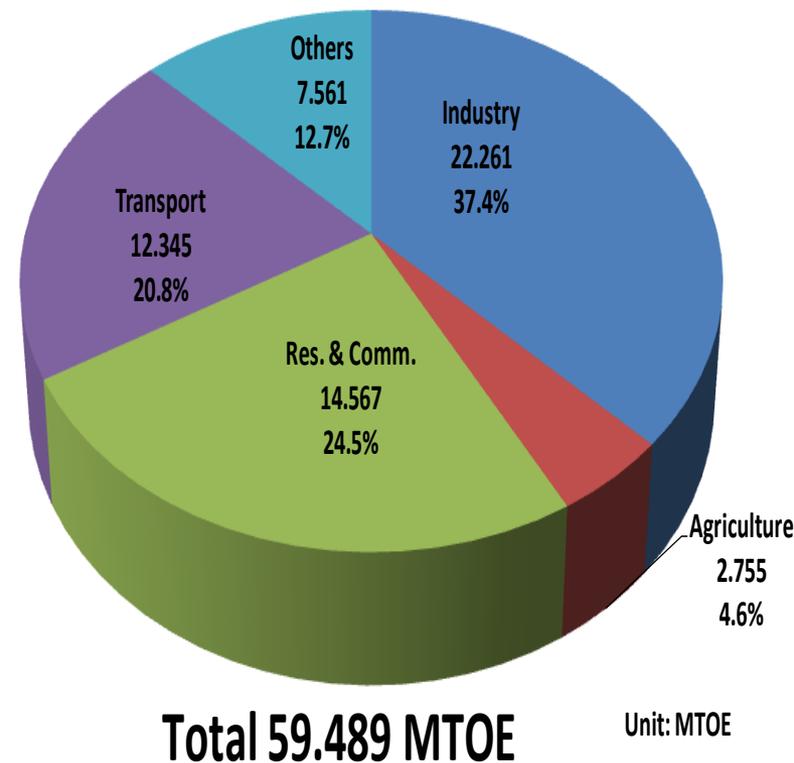
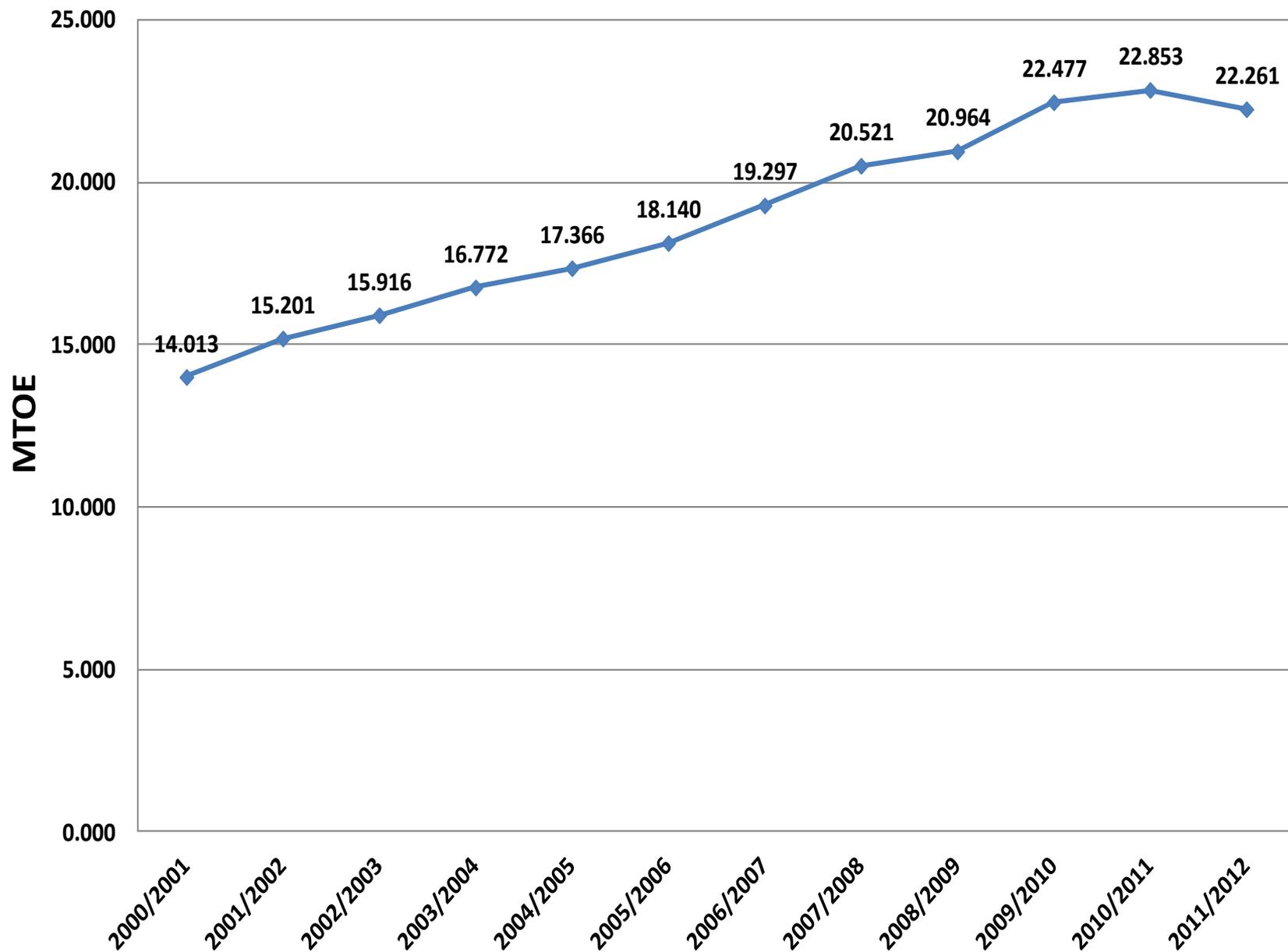


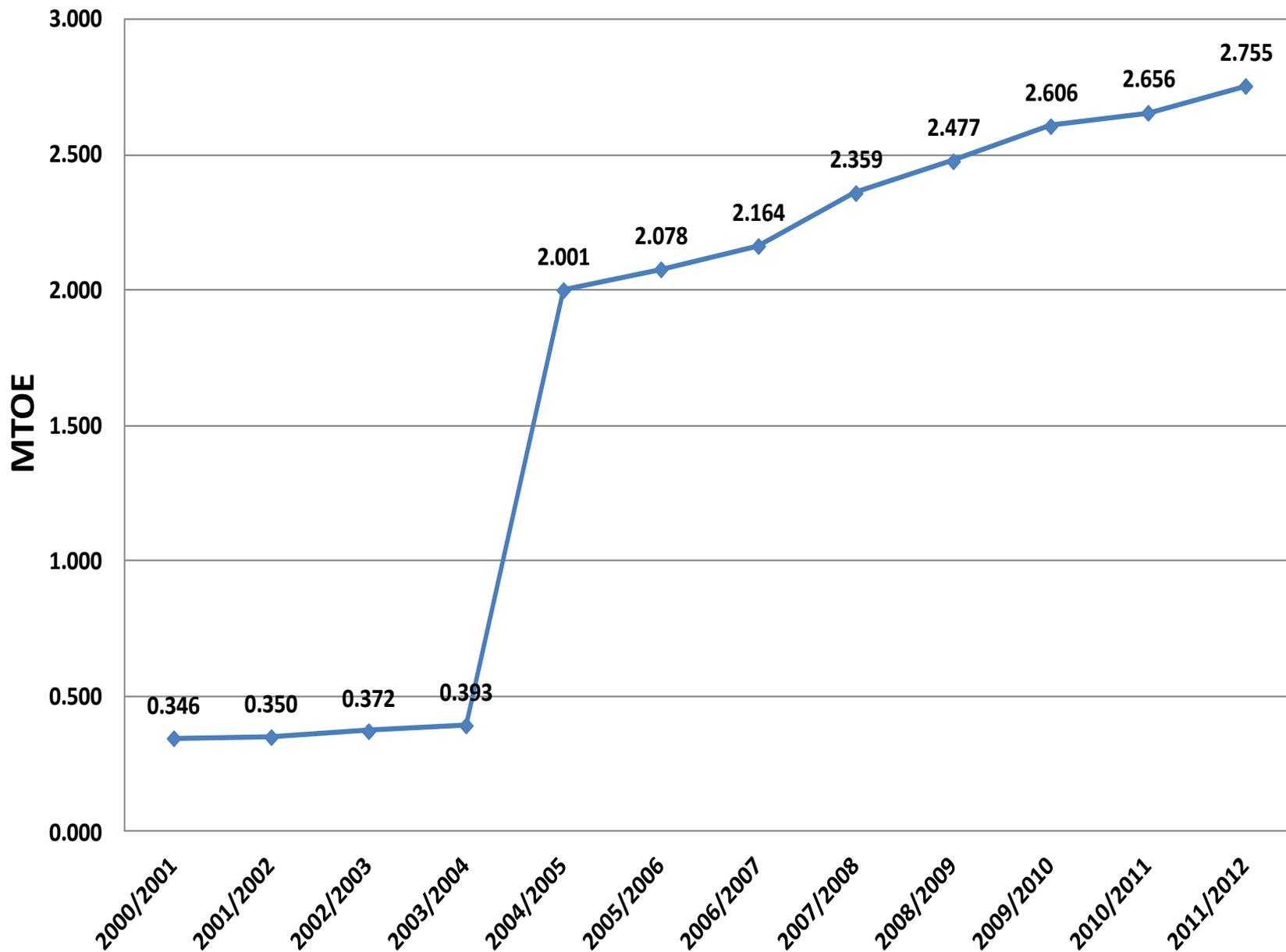
Fig. 3.27: Sectoral Final Energy Consumption Pattern (2011/2012)



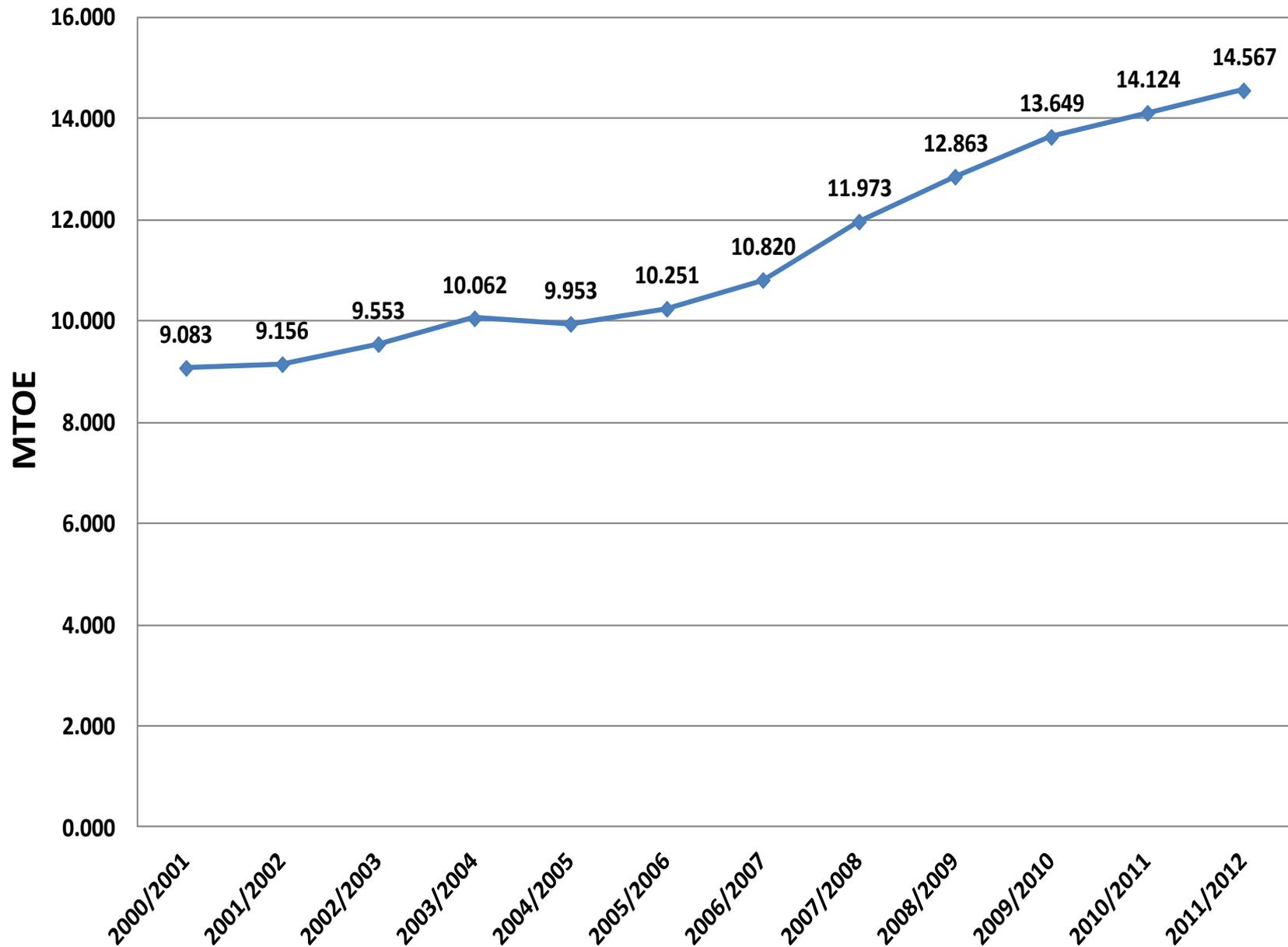
**Fig. 3.25: Industry Final Energy Consumption
(2000/2001 - 2011/2012)**



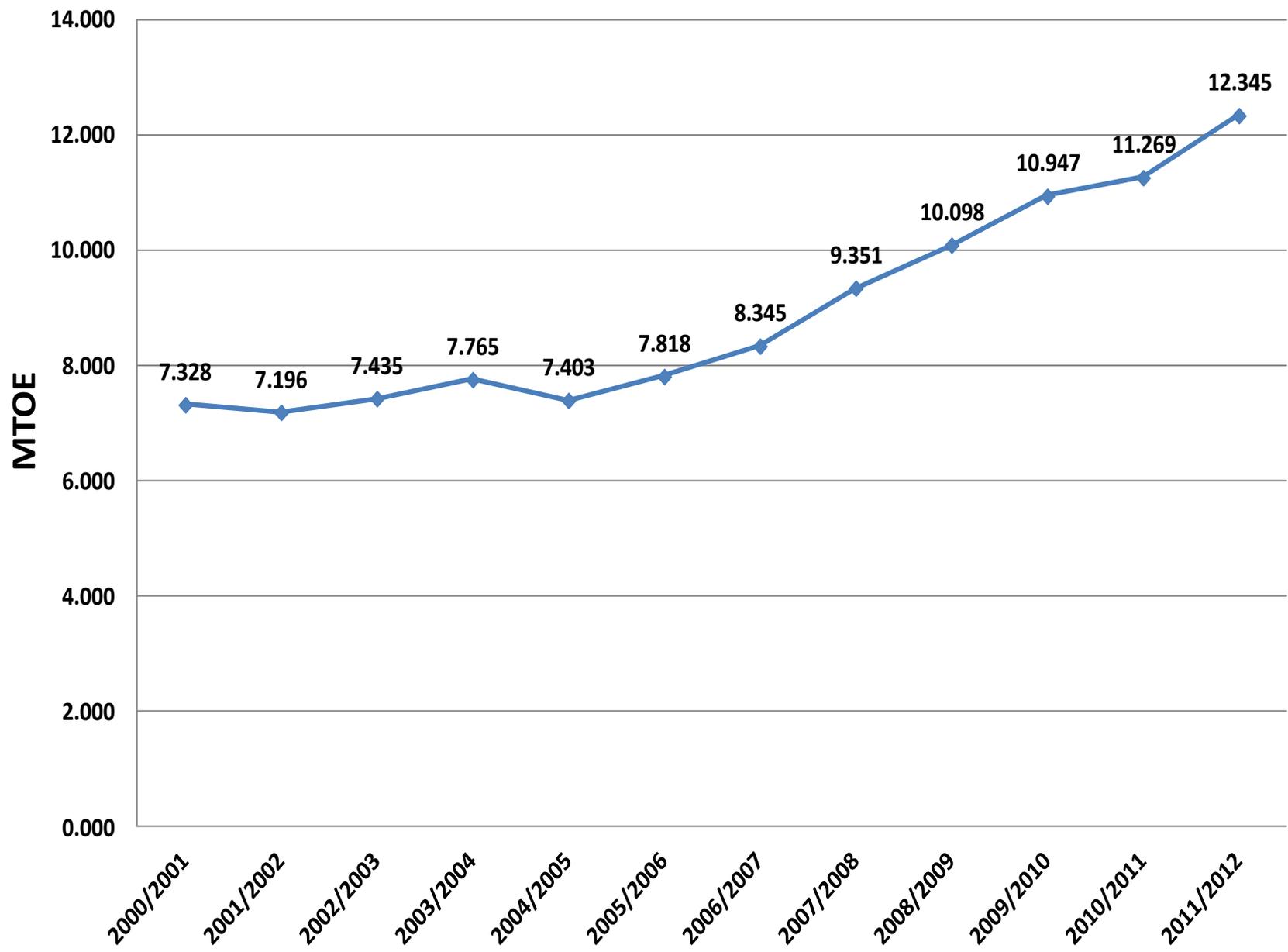
**Fig. 3.28: Agriculture Final Energy Consumption
(2000/2001 - 2011/2012)**



**Fig. 3.29: Residential and Commercial Final Energy Consumption
(2000/2001 - 2011/2012)**



**Fig. 3.30: Transport Final Energy Consumption
(2000/2001 - 2011/2012)**

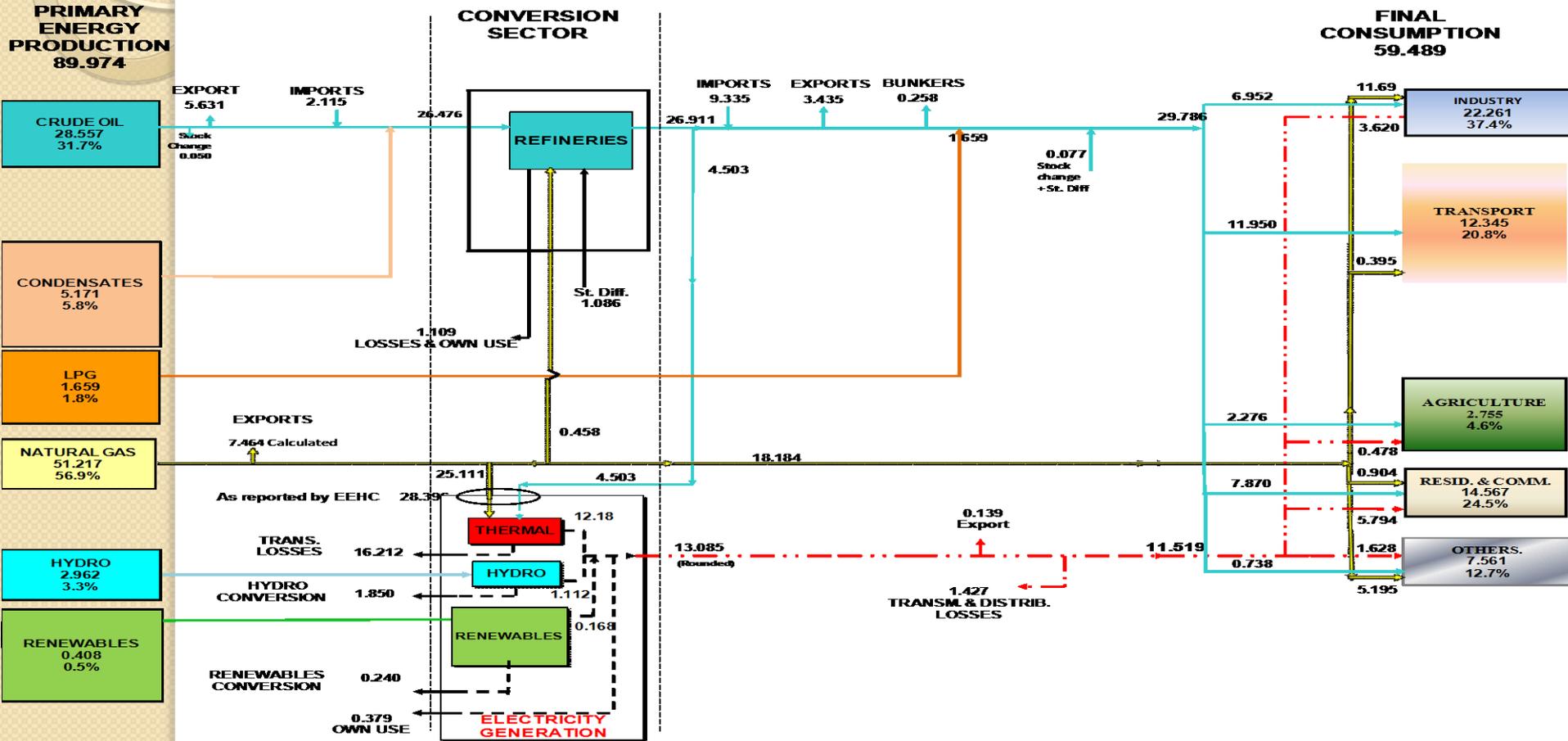


4. Energy Balance

Supply	Crude Oil & NGL	Petroleum Products	Natural Gas	Hydropower	Renewables	Total
Production	33.728	1.659	51.217	2.962	0.408	89.974
Imports	2.115	9.335				
Exports	5.631	3.435	7.464			
International Marine Bunkers		0.258				
Stock Changes	0.050	-0.077				
Refinery - Input	26.476	33.728	0.458			
- Output		26.911				
Statistica Difference						
Total Supply		34.289	43.295	2.962	0.408	89.974
Input to Electricity Production		4.503	25.111	2.962	0.408	32.984
Final Consumption	Petroleum Products	Natural Gas	Electricity			Total
Industry	6.952	11.690	3.620			22.261
Agriculture	2.277		0.478			2.755
Residential/Commercial	7.870	0.904	5.794			14.567
Transport	11.950	0.395				12.345
Others	0.738	5.195	1.628			7.561
Total Final Consumption	29.786	18.184	11.519			59.489

4. Energy Flow

ENERGY BALANCE IN EGYPT 2011/2012



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