

Vietnam Energy Overview

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Vietnam is a country located in the Southeast Asia. It is bordered with Laos and Cambodia in the west, China in the north. As of 2010, population of Vietnam is 86.92 millions people; GDP is USD 62.9 billion and GDP/capita is 723 USD/person (USD2000) in 2010 (equal to 1223 USD/person in present US dollar value). Average growth rate of GDP is 7.3%/year in the period 2001-2010 and about 6.8%/year in period 2009-2010.

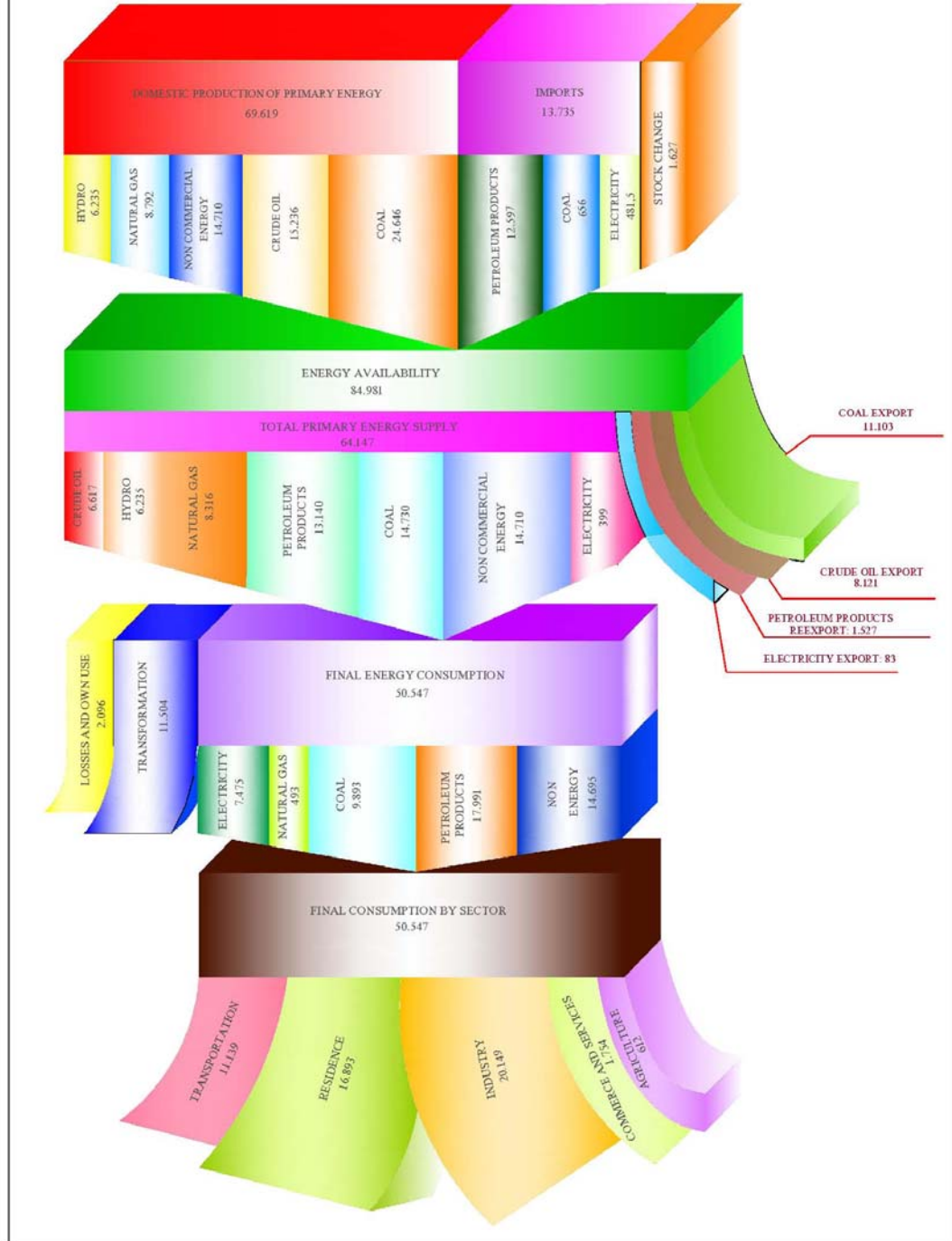
Vietnam Energy sector significantly contributes in country economic development, growth of industry and export. Vietnam has multi energy resources such as natural gas, oil, coal, hydropower, biomass, wind and solar energy..., however, they are not abundant.

According to the experts, estimated potential of oil and gas is about 4 billion TOE, 6 billion tons of coal and about 20,000 MW of hydropower. Gas and crude oil are being exploited in the southern offshore areas, coal is exploited in the Northern Region. From 1990, Vietnam began exporting energy, mainly coal and crude oil.

Diagram of energy flows in 2010 is shown in the following figure:

ENERGY FLOW CHART : 2010

UNIT: KTOE



1. Energy production

Growth rate of total energy production is 7.9%/year in period 2001-2005, with increased production of coal, crude oil, gas and noncommercial energy. The growth rate of energy production is 2%/year in period 2006-2010.

In 2010 share of commercial energy is 79%, share of non-commercial energy is 21% in total energy production. Evolution of energy production by energy type is shown in the Figure 1.

Figure 1: Growth rate of energy production by energy type

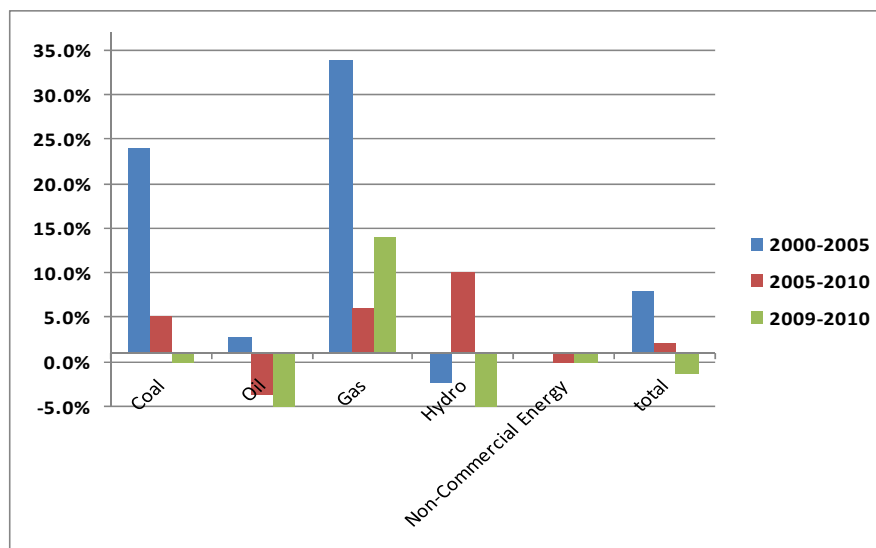
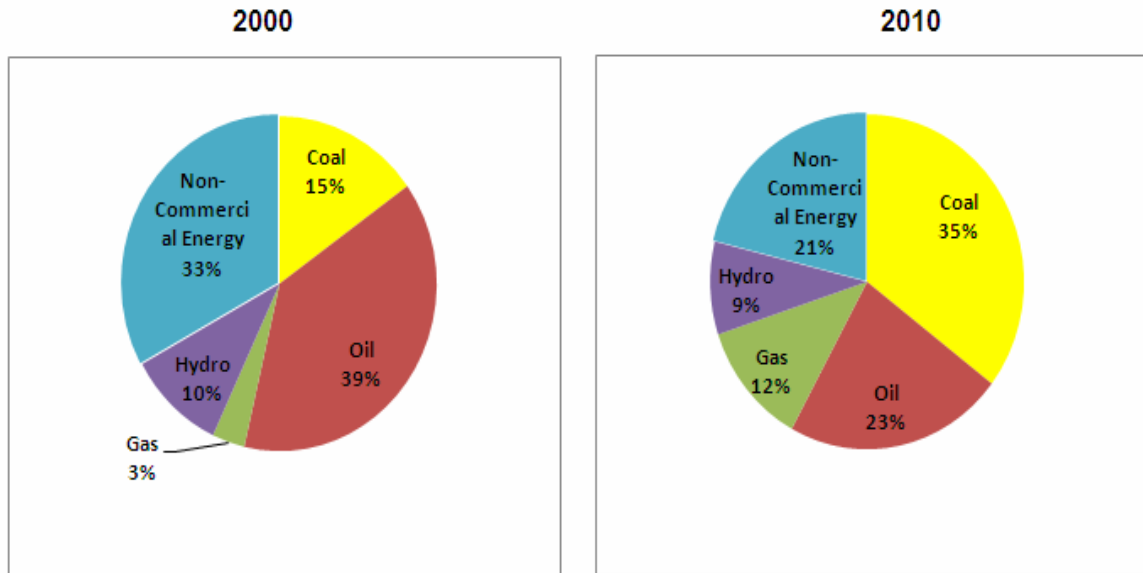


Figure 2 illustrates share of energy production by energy type in total energy production in 2000 and 2010. In period 2001-2010, shares of coal and oil are dominant in energy production: share of coal is increased from 15% to 35%, meanwhile oil is decreased from 39% to 23%, non-commercial energy is decreased from 33% to 21%, hydropower is decreased from 10% to 9%.

The share of gas production is increased from 3% in 2000 to 12% in 2010.

Figure 2: Total energy production by fuel type

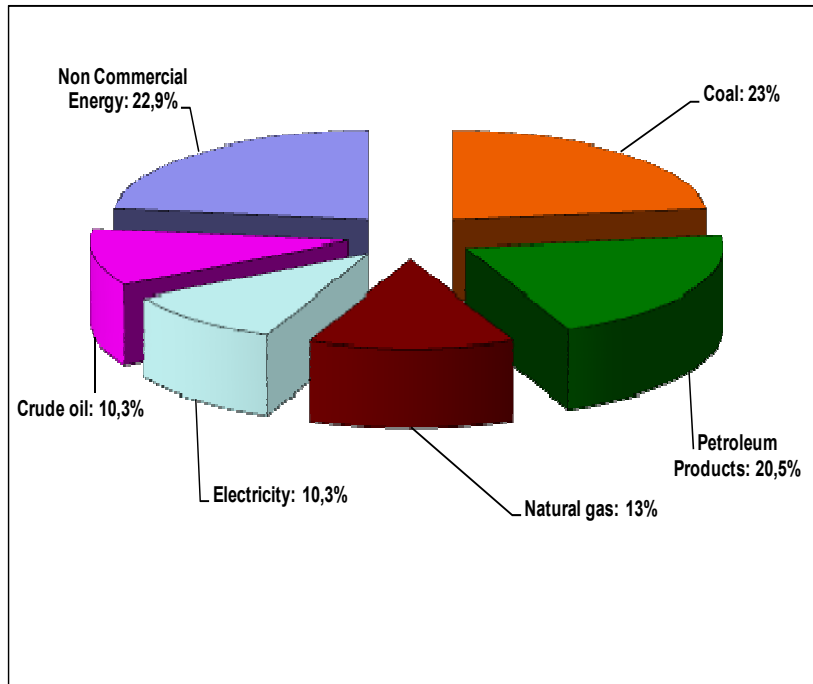


Primary energy

Total primary energy production is increased by 7.1% in period 2001-2010. Shares of oil, coal, gas, noncommercial energy, electricity and petroleum products in total primary energy supply are 10.3%, 23%, 13%, 22.9%, 10.3%, and 20.5% respectively.

Shares of energies in total primary energy supply in 2010 are shown in the Figure 3.

Figure 3: Share of primary energy supplies

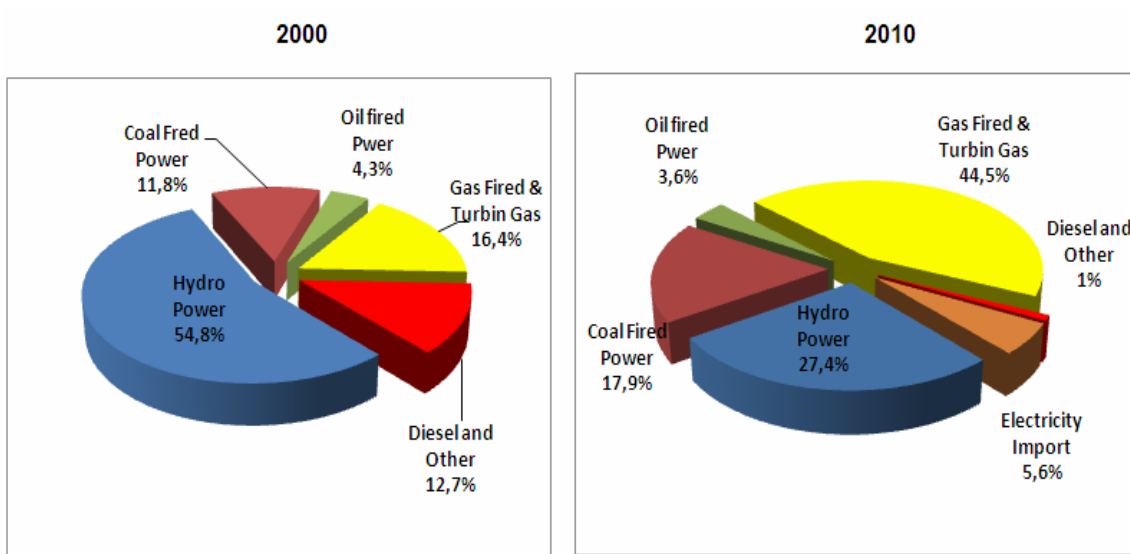


Energy import is one important energy resource for Vietnam. Energy import is increased from 7.9 Mtoe in 2000 to 12.2 Mtoe in 2010, at growth rate 3.4%/year. The share of imported energy in comparison with primary energy supply tends to decrease from 25% in 2000 to 19% in 2010 because Dung Quat oil refinery began operation in 2009.

2. Electricity production

Average growth rate of electricity production is 14.3%/year in period 2001-2010. Structure of electricity generation was strongly changed in recent decade. Structure of electricity generation in 2000 and 2010 is shown in Figure 4.

Figure 4: Structure of electricity generation

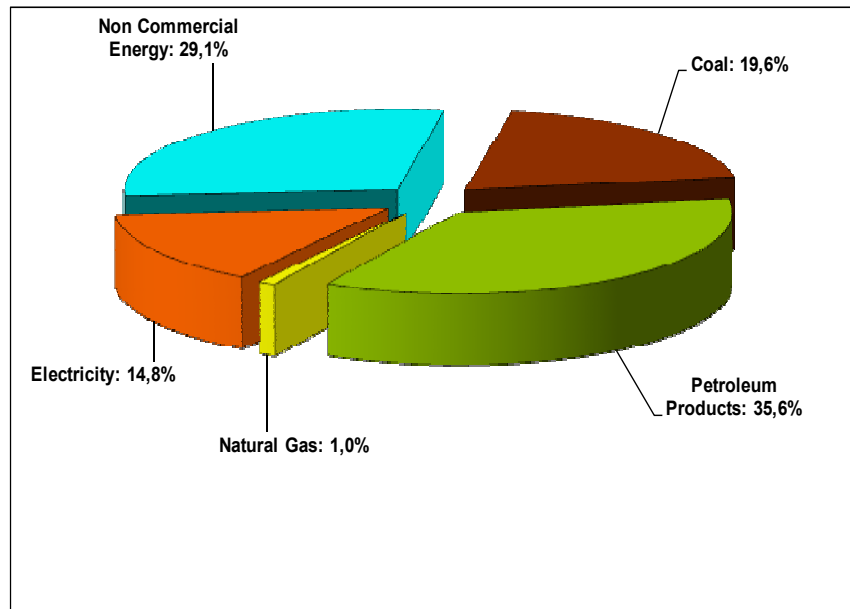


3. Final energy consumption

In 2010, total final energy consumption is increased by 6.8% in comparison to 2000. In which, petroleum products account for the highest share, of 35.6%, then the next is non-commercial energy: 29.1%, coal: 19.6%, electricity: 14.8%, and gas: 1%.

Share of final energy consumption by fuel type in 2010 is shown in Figure 5.

Figure 5: Shares of final energy consumption by fuel type



Industry is the biggest energy customer with share of 39.9% in total energy consumption in 2010, increased by 30.6% in comparison to 2000. The most energy consumption is in steel, construction material, paper, chemical industries. Energy consumption in residential sector is the second largest. Share of energy consumption by this sector in 2010 is 33.4%, reduced from 48.8% in 2000. Growth rate of energy consumption in residential sector is 2.8% in period 2001-2010. Renewable energy and biomass energy resources are main energy resources consumed by rural households.

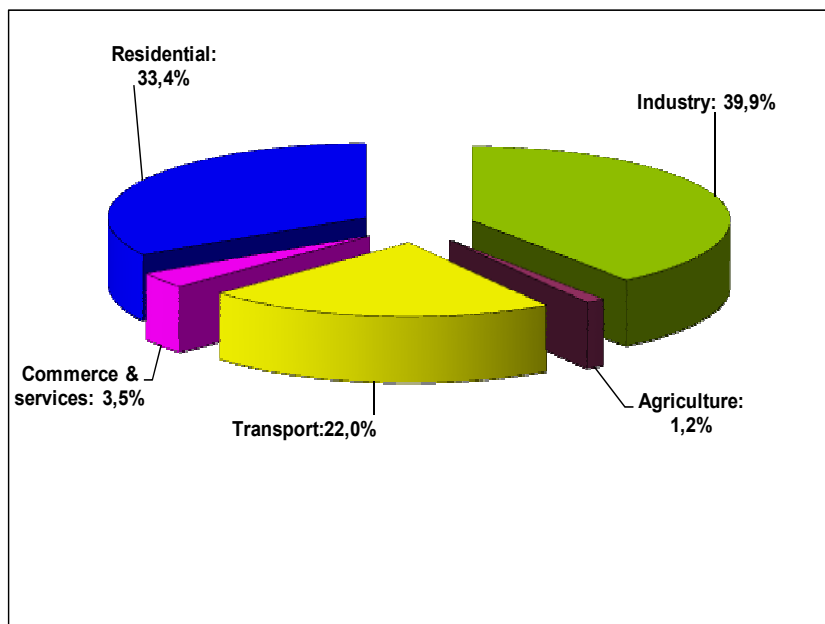
Transport sector's energy consumption share in total energy consumption is increased from 14.7% in 2000 to 22% in 2010, with growth rate of 11.2% in this period. Petroleum products such as diesel oil, gasoline and heavy oil are main fuels consumed in this sector.

In 2010, the main energy consumed in services and commerce sector are electricity, coal, LPG, with share of 3.5% in total final energy consumption, reduced by 4.4% in comparison to 2000. The average growth rate of energy consumption in this sector is 4.3 % in the period 2001-2010.

Agriculture sector has the least energy consumption, with share of 1.2% in total final energy consumption in 2010, reduced by 1.5% in comparison to 2000. Main energies consumed in agriculture sector are electricity, coal, heavy oil, diesel oil, and gasoline.

Share of final energy consumption by sector in 2010 are shown in Figure 6.

Figure 6: Share of energy consumption by sector



4. CO₂ emission

Total CO₂ emission in 2010 by energy sector in 2010 is 56.024 kt-C (calculated according to emission factor APEC and 2006 IPCC). Total CO₂ emissions in 2010 calculated by sector and by energy type are shown in Figure 7 and Figure 8.

Figure 7: CO₂ emission by sector

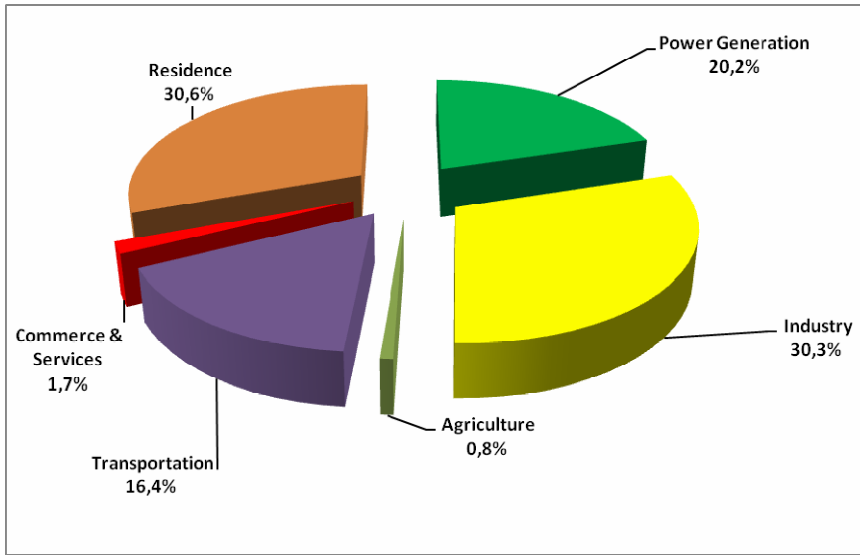


Figure 8: CO₂ emission by energy type

