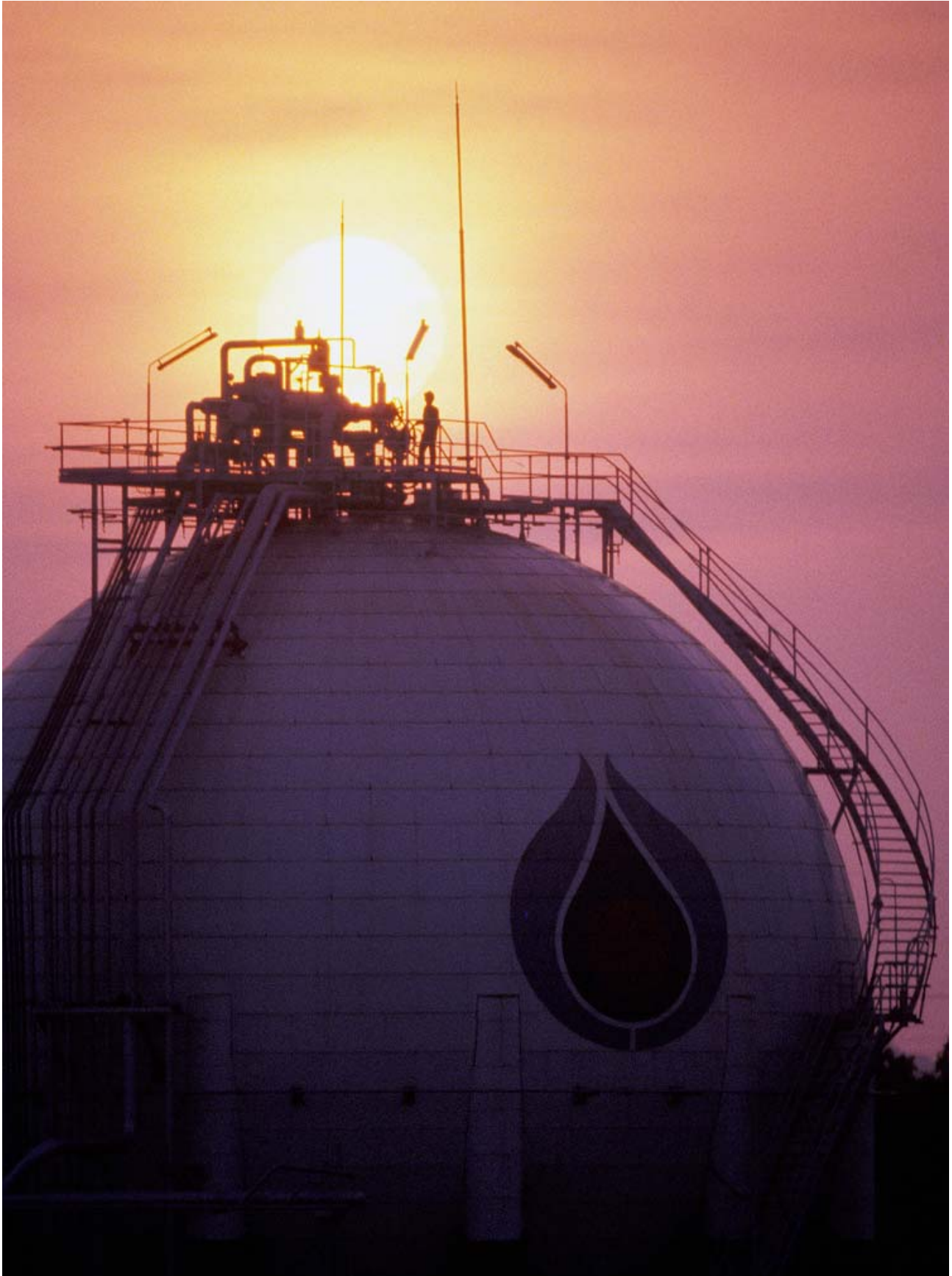


Economic and Petroleum Overview



Overview of World Economy

The World Bank has predicted that the world economy in 2008 would grow only 2.5% which was 1.2% lower growth from 2007. In this regard, major industrial countries, i.e. the US, Europe, and Japan have undergone a continuous contraction of economic growth during the first three quarters of the year due to the reduced consumption and investment from the private sector, as well as the slow exports, of which the downward trend could be observed since the 2nd quarter due to the shrinking economy of trading partner countries. Meanwhile, emerging countries, China and India in particular, could achieve high economic growth thanks to the expanding domestic demand and exports. In the 4th quarter, the growth rates of developed countries and major industrial countries as well as export-oriented countries, especially those in Asia, have gone through sharp contraction. This situation stemmed from the sub-prime troubles in the US, which started in 2007, and their severity later escalated into a financial crisis. The collapse of renowned financial institutions in the US, including Lehman Brothers and Washington Mutual, resulted in a lack of liquidity in the world financial regime. The situation consequently caused the capital markets in all regions to plummet. Moreover, the impact from the crisis expanded into the real sector and investment sector. Prices of goods and commodities dropped while unemployment increased. Domestic spending has dropped significantly, thus causing many exporting countries to lower their exports, which brought about the world economic crisis.

Estimates of Economic Growth Rate for Various Clusters

Unit : %

	Estimates		2009 Forecast
	2007	2008	
World	3.7	2.5	0.9
Developed Countries	2.6	1.3	-0.1
US	2.0	1.4	-0.5
Europe	2.6	1.1	-0.6
Japan	2.1	0.5	-0.1
Developing Countries	7.9	6.3	4.5
East Asia and Pacific	10.5	8.5	6.7
China	11.9	9.4	7.5
Thailand	4.9	2.6	(-1) - 0

Sources: World Bank and National Economic and Social Development Board (NESDB) of Thailand as of February 23, 2009

World Demand for Energy and Energy Price

In 2008, the world economy made a strong impact on the world demand for energy, particularly oil. During the first three quarters, rapid economic growth in emerging countries, especially China, India, Middle East and Latin American countries, significantly boosted the world's demand for oil. Notably for China, the country's built-up domestic oil stock for use during the Olympic Games has caused the spare capacity of oil exporting countries to continuously reduce from the 1st quarter to the 3rd quarter. Moreover, price hedging in the oil futures market has contributed to a rapid increase in the oil price. Dubai crude shot up from \$89.3 per barrel at the beginning of the year to a historic peak of \$140.8 per barrel in July, thereby creating an oil price crisis during that period. But following the dramatic economic slump in the 4th quarter, which caused a reduction in world oil consumption, spare capacity significantly and rapidly increased, thus producing a result on the sharp and continuous reduction of world oil price towards the end of the year. OPEC tried to lower its oil production level, thus bringing down the Dubai price to \$40.2 per barrel at the end of December, a 71% reduction; the annual average price of Dubai was \$93.4 per barrel, which still exceeded that of the previous year by 37%. As for refined products in the Singapore market, the prices of octane-95 gasoline and diesel moved up and down in accordance with the world price, registering their annual averages of \$102.5 and \$119.5 per barrel, 24% and 40% higher than the previous year.

Regarding the gross refining margin (GRM), the demand for finished petroleum products, particularly diesel used in the transportation sector, rose in response to the world economic expansion until the middle of the 3rd quarter. This resulted in a rising GRM in various regions of the world. But after the world economic crisis started, consumption of petroleum products significantly shrunk since the middle of the 3rd quarter. Coupled with new refining capacities, i.e. new refinery, with 580,000 bbl/d capacity, belonging to Reliance Industries and Reliance Petroleum in India, brought on stream in December 2008, the GRM during the last quarter of the year fell sharply.

World Oil Demand and Supply in 2008

(Unit: MBPD)

Demand	2007	2008				2008 average
		Q 1	Q 2	Q 3	Q 4	
Africa	3.1	3.1	3.2	3.0	3.2	3.1
North America	31.1	30.5	30.4	29.7	30.0	30.2
Asia-Pacific	25.1	26.3	25.4	24.7	24.7	25.3
Europe	16.0	16.0	15.7	16.1	16.0	15.9
Russia	4.1	4.1	4.1	4.3	4.3	4.2
Middle East	6.5	6.7	7.0	7.3	6.8	7.0
Total	86.0	86.8	85.7	85.2	85.0	85.7
Supply						
OPEC	34.9	37.3	37.1	36.2	35.3	35.9
Non-OPEC	50.7	49.8	49.7	50.0	50.6	50.6
Total	85.6	87.1	86.8	86.2	85.9	86.4

Source : International Energy Agency (IEA as of February 11, 2009)

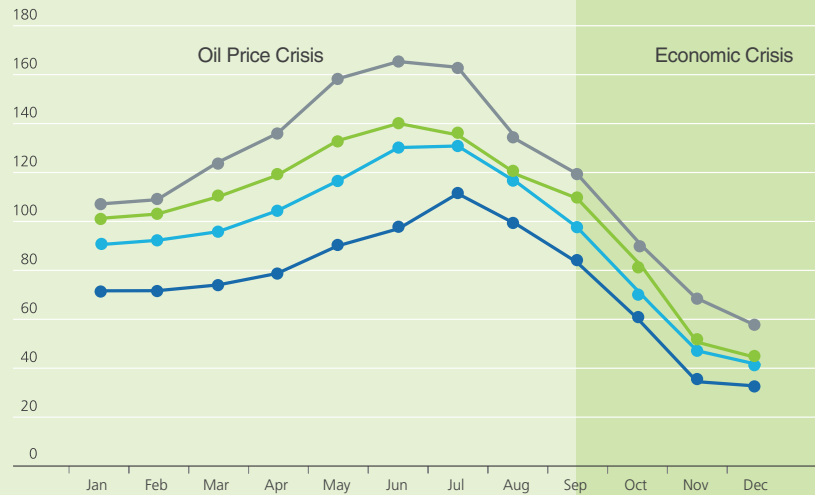
Regarding petrochemical products, the prices in the world market moved upwards with the crude price. In the first half of the year, the world crude price increased continuously, thus causing the naphtha price in Asia to rise by 54% than the same period of 2007. The price reached its peak of \$1,133 per ton in June. Around the end of the year, however, the naphtha price in Asia dropped sharply due to more production in the Middle East, coupled with the sharply dropping world oil price as a result of the much lower demand. Naphtha's annual average price was at \$803 per ton, up 19% from 2007. As for petrochemical products in the olefins line, the annual average of SEA ethylene price was at \$1,144 per ton, down about 4% from 2007. This was due to the expansion of production capacity in the region and new capacity in the Middle East. Regarding high-density polyethylene (HDPE), its price moved up and down in line with the world oil price with its annual average of \$1,481 per ton, up 9% from 2007. The propylene price also increased during the first half of the year as a result of the opening of a new 450,000-ton-per-year polypropylene (PP) plastic pellet plant belonging to Formosa Petrochemical in China. Besides, crackers in Japan and Indonesia underwent their temporary shutdowns. However, in the 4th quarter, the propylene price dropped following new capacities in the Middle East and decreased demand from China and India resulting from the economic crisis. The annual average price of propylene was \$1,258 per ton, up about 9% from 2007.

As for the prices of aromatics products, the benzene price adjusted upwards in line with the crude price, with an annual average of \$987 per ton, a 3% increase from 2007.

Affected by the price fluctuation of crude and petroleum products as well as petrochemical products and naphtha which shot up in the beginning of the year and rapidly dropped off in the last quarter of the year, refining and petrochemical businesses have experienced significant losses. Such losses were contributed by stock losses of oil and feedstock, physical losses, and accounting losses at the end of the fiscal year.

2008 Price of Dubai Crude and Refined Products In Singapore Market

Unit :US\$/bbl



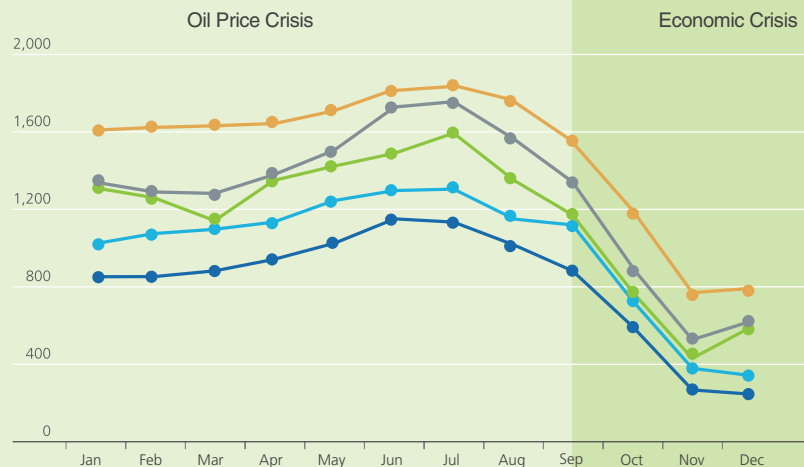
● Fuel Oil ● Crude ● Gasoline ● Diesel

Petroleum Price	2006	2007	2008				2008
			Q 1	Q 2	Q 3	Q 4	
Crude	61.5	68.4	91.2	116.7	113.4	52.6	93.5
Gasoline	73.1	82.9	104.9	129.6	119.3	56.2	102.5
Diesel	76.7	85.1	114.1	154.2	139.0	70.4	119.5
Fuel Oil	49.2	58.4	74.4	92.5	102.5	44.8	78.6

Source: PLATTS Oilgram News

Price of Petrochemical Products in Asia Market

Unit :US\$/ton



● Naphtha ● Benzene ● Ethylene ● Propylene ● High Density Polyethylene

Petrochemical Price	2006	2007	2008				2008
			Q 1	Q 2	Q 3	Q 4	
Ethylene	1,168	1,189	1,247	1,386	1,378	565	1,144
Propylene	1,132	1,155	1,296	1,520	1,574	644	1,258
Benzene	865	1,020	1,049	1,217	1,208	475	987
Naphtha	515	625	854	1,017	991	352	803
High Density Polyethylene	1,234	1,352	1,607	1,677	1,713	928	1,481

Source: PLATTS Oilgram News

Thailand's Economy in Brief

The National Economic and Social Development Board (NESDB) concluded that Thailand's 2008 economic growth was 2.6%, down 2.3% from 4.9% growth in 2007. During the first three quarters of the year, the country had healthy economic growth, averaging at 5.1% due to the expansion of domestic demand and exports. However, in the 4th quarter, the economic growth weakened by 4.3% from the contraction of export and service sectors, in turn affected by the world economic crisis, especially in trading partner countries, i.e. European countries, the US, and China. In addition, the closure of Suvarnabhumi and Don Mueang International Airports from late November to early December created huge impacts on the tourism and transportation industries. The world financial and economic crises, moreover, has caused the Thai capital market to plunge, in the same manner as in other parts of the world. This includes the impact from the relocation of foreign investment, which prompted foreign investors to sell shares for cash. As a consequence of export contraction and world economic crisis, the Thai currency has weakened.

Domestic Demand for Energy and Energy Price

In 2008, Thailand went through an oil price crisis during the first seven months of the year, as well as the financial crisis and the world economic crisis which brought about an impact in the last quarter of the year. The energy crisis caused the domestic demand for energy to drop. Demand for fuels (excluding LPG and NGV) totalled to 89.3 million liters per day (equivalent to 562,000 bbl/day), down 7% from the previous year. Demand for natural gas was at 3,444 MMcf/d, up 5% from 2007. Meanwhile, demand for electricity was 148,220 million units, up only 0.8%, lower than the prediction in the Power Development Plan 2007, where 5.6% increase was expected.

In addition, the increased retail oil price which kept up with the world oil price caused consumers to turn to alternative fuels, LPG and NGV in particular. LPG demand for use as fuel increased from 3.1 million tons per year in 2007 to 3.6 million tons per year in 2008, a 16% increase. This represented 36% and 9% expansion in the transport and industrial sectors accordingly. NGV demand surged by 220%, due to the retail prices of LPG and NGV, still tightly controlled by the government. The National Energy Policy Council (NEPC) agreed to cap the ex-refinery LPG price at Baht 10.996 per kilogram (\$314-332 per ton at the exchange rate of around Baht 35-33 per US\$ 1) from March 2008, which was the price that LPG producers, namely gas separation plants and refineries, quoted for oil traders. At the same time, the world LPG price announced by Saudi Arabia or LPG CP increased to \$775 per ton in 2008.

The significant increase of demand for LPG brought about insufficient supplies from gas separation plants and refineries. This further caused the need for import since April 2008. In this regard, the total imports of LPG throughout the year was at 446,878 tons. As the sole importer, PTT has shouldered the burden occurred from the difference between the import price and the government-controlled domestic price. In this regard, the Oil Fund will reimburse it later on.

Economic and Energy Outlook for 2009

In 2009, many world-leading financial and economic institutions has forecasted that the world would still be in a downturn, continuously from late 2008. The World Bank envisaged that the world's overall economic growth would stand of 0.9%, with a contraction of 0.1% among developed countries and growth of 4.5% among developing countries. The International Monetary Fund (IMF) foresaw that the world economy would expand by 0.5%, with a contraction of 2.0% among developed countries and growth of 3.3% among developing countries and predicted further that the world economy could possibly pick up in 2010. However, it is difficult to predict when the world economy will recover since this crisis is unique and leading countries in all parts of the world have been severely affected and it unavoidably affected developing countries.

The sluggish world economy has caused the energy demand to shrink and consequently caused a reduction of the world oil price in the world market. Experts anticipated that if the world economy would still be going slow, the oil price would hover around the present level. OPEC would then try to reduce their production to shore up the oil price. But if the economy started to pick up along with the demand for oil, the oil price could possibly rise to \$60-\$80 per barrel, which is the marginal cost of production. And if the

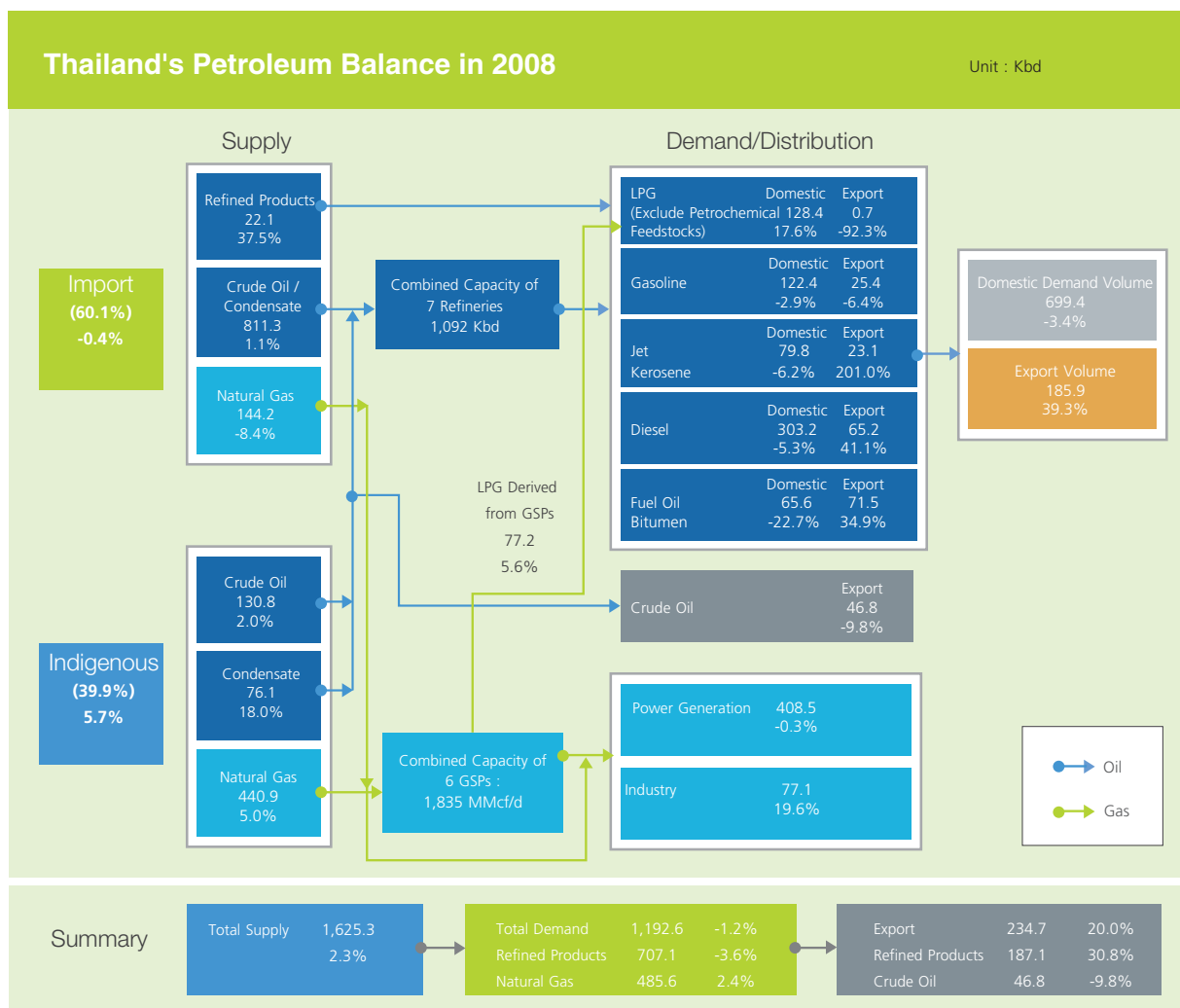
demand for oil increased further, the price might return to its high level as in the first half of 2008.

As for the Thai economy for 2009, NESDB foresees that the annual average growth would be in the region of minus 1% - 0%. This is due to the world economy, which has shrunk more than expected, especially in the first half of the year. Moreover, considering the financial institutions' extreme caution in granting loans and the private sector's low confidence amid the dull economic climate, it could be expected that the business sector will reduce the production capacity and employment, particularly in the industrial, construction and property, retail and wholesale, transport, and financial sectors.

Regarding the domestic fuel demand, the Energy Policy and Planning Office (EPPO) estimated that the overall fuel demand growth would be 0.8% in 2009. In this respect, oil demand will likely shrink by 0.3% while demand for LPG will expand by 6%, based on the assumption that the oil price will stay low. Demand for natural gas is expected to expand by 2% in 2008 in line with the country's power demand.

The refining industry is expected to enter its down cycle due to new capacities in China and Vietnam as well as additional ones in India. Moreover, the global demand for refined products is still slow. According to a prediction made by Cambridge Energy Research Associates, demand for petroleum products would decline by about 0.7 million bbl/d in 2009, which would bring down the refining margins.

Regarding the outlook for the petrochemical industry in Asia during 2009, imbalance between demand and supply could be expected. As from 2009-2012, there will be new capacities in the Middle East, such as from Saudi Arabia, Iran, Qatar, and some other countries in Asia. At the same time, demand will shrink in line with the world economy. The petrochemical industry will have to go through its downturn as well. Analysts foresee that the petrochemical industry's cycle will move upward again in the next 2-4 years in line with the recovering global economy.



Source: PTIT, February 24, 2009