

How the World's Energy Supply-Demand/Trade Structures Have Changed during 30 Years since the Oil Crises ?

**Kazuya Fujime, Senior Advisor for Research
The Institute of Energy Economics, Japan**

The CIF price of crude oil in Japan, which was US\$2.57/bbl in FY1972 just before the oil crisis (the first one in 1973), soared 14.4 times to US\$36.89/bbl by FY1981 immediately after the second oil crisis. As a result, energy conservation and energy switching from oil, under way chiefly in industrialized countries, sent oil demand plunging and the crude oil price set to fall gradually from FY1982 onward to the US\$13.81/bbl level by FY1986, or one-thirds of the peak. This was called a reverse oil shock. During the subsequent few years, the crude oil price has stayed at low levels and had the ripple effects of pushing the alternative energy prices down and discouraging conservation efforts. These prompted switching back to oil, and oil demand turned upward. The crude oil price rose to US\$22.76/bbl in FY1990 in the wake of the Gulf crisis, but remained low, or US\$18.26/bbl on average in FY1991-99. It reflected the collapse of socialism in the former Soviet Union/East Europe in the first half of the decade and a slower growth of oil demand, partly due to the Asian currency crisis, in the second half. Majors and oil-producing countries alike faced dwindling revenues, which spurred big mergers among the former and resulted in the birth of super majors (e.g. ExxonMobil, BP Amoco Arco), while the latter successfully transferred to coherent moves to limit production. As a result, the crude oil price level in FY2000 picked up to US\$28.37/bbl, some \$10 higher than in the 1990s. This helped majors restore their earnings and ensured stable oil revenues for producing countries, including Russia. With a lapse of 30 years after the oil crisis, the world's energy mix/energy map changed drastically. These changes are analyzed with the BP Statistics in use (1981-2003 editions for general energy issues, 1957-1980 editions for oil issues). Though the source is not specified, the BP Statistics is the original text of all the figures and tables referred to hereinafter. In 1972 immediately before the first oil crisis, the world's primary energy mix was composed of oil (47.3%), natural gas (18.0%), coal (32.5%), hydro (2.0%) and nuclear (0.2%). In 2002, or 30 years later, it was made up of oil (37.5%), natural gas (24.2%), coal (25.5%), hydro (6.5%), nuclear (6.3%), thus showing oil and coal shares shrinking, while natural gas and nuclear shares rising. North America/Europe accounted for 52.2% of the world's primary energy in 1972, but the share shrank to 43.4% by 2002. Over the same period the share held by the

Asia/Pacific region swelled from 16.4% to 28.9%. The world's primary energy increased an average 1.8% a year during the past three decades. A closer examination unveils that, aside from the two oil crises, a crucial point of changing energy shape was the sharp economic plunge resulting from the demise of socialism in the FSU/East Europe in around 1990. With 1990 taken as a peak, primary energy of the FSU/East Europe slumped to about two-thirds. This region was responsible for 22.2% of the world's primary energy in 1990, which contracted to 12.3% by 2002. It can be counted as a severer shock of socialist system falling apart than the oil shocks.

1. Supply and Demand of Primary Energy

With the past three decades punctuated in every ten years of (1) 1972-1982, (2) 1982-1992 and (3) 1992-2002, the world's primary energy consumption (supply) grew by an average 2.3%/year during the first period hit by an oil crisis twice. The growth averaged 1.8%/year in the subsequent post-oil-shock period, and 1.4%/year in the third period after the shock of shattered socialism. Thus, slowing down the steeper in the later periods, the growth averaged 1.8%/year in 30 years overall. In the advanced industrialized areas, oil substitution has advanced, which precipitated shrinking oil share from 47.3% → 41.0% → 38.7% → 37.5% worldwide. On the other hand, when combined, natural gas and nuclear increased their shares from a total of 18.2% → 22.6% → 28.2% → 30.8%. As for coal, amid the away-from-oil move after the oil crises, oil-to-coal shifts were under way in industrialized countries in 1972-1982. But, from 1986 onward, the growth of coal slowed down due to the falling oil price and environmental constrains, among others. Throughout the 1972-2002 period, the coal share in the world's primary energy consumption shrank/recoiled from 32.5% → 29.7% → 26.9% → 25.5%. It should be noted, behind these moves, there are economics, including prices, and environmental characteristics.

Table 1 The Trends of Primary Energy Consumption in the World

	1972	%	1982	%	1992	%	2002	%
Oil	2,590.0	47.3	2,823.7	41.0	3,170.4	38.7	3,522.5	37.5
Natural Gas	984.0	18.0	1,329.6	19.3	1,836.2	22.4	2,282.0	24.3
Coal	1,779.4	32.5	2,045.9	29.7	2,202.8	26.9	2,397.9	25.5
Hydro	110.3	2.0	464.6	6.7	509.2	6.2	592.1	6.3
Nuclear	14.3	0.2	223.9	3.3	478.5	5.8	610.6	6.5
Total	5,478.0	100.0	6,887.7	100.0	8,197.2	100.0	9,405.0	100.0

Fig. 1 The Trends of Primary Energy Consumption in the World

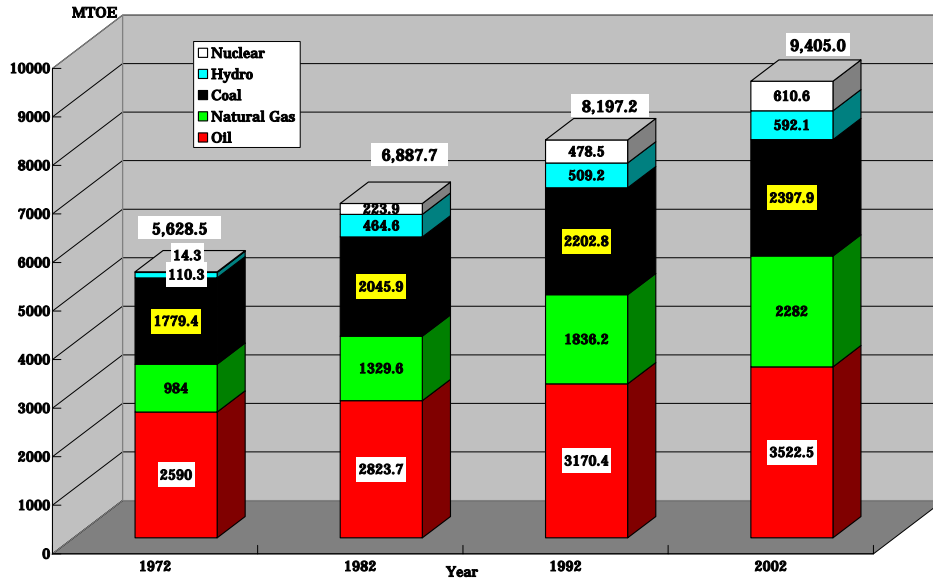
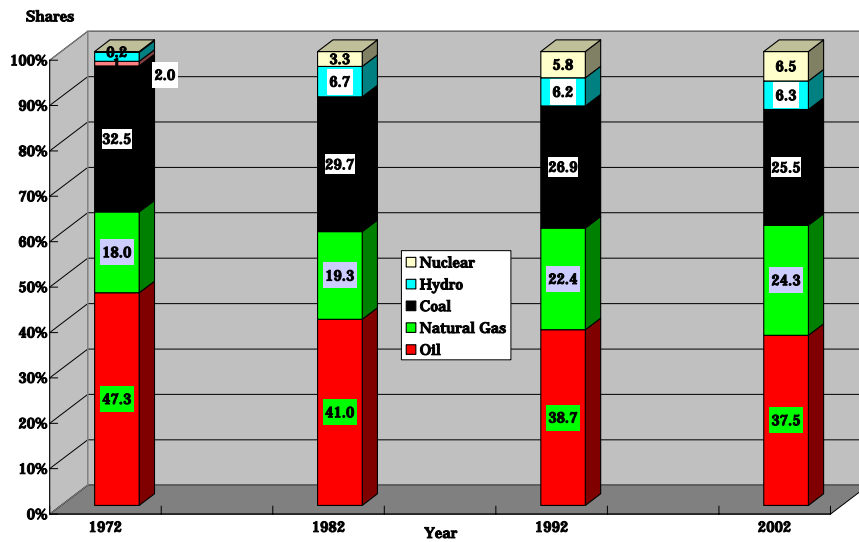


Fig. 2 The Trends of Primary Energy Consumption Shares by Area in the World



2. Supply and Demand of Oil

(1) Oil Production

The world's oil output grew at an annual pace of 1% on average in 30 years of 1972-2002. The North American oil production, responsible for 23.6% of the world's output in 1972, had its

share falling to 20.0% in 1982, 16.0% in 1992 and further to 13.7% by 2002. The rate of fall averaged 0.8% in 30 years. In 1972-1982, as a reaction to the price hikes during the oil crises, oil production in the Middle East plunged by about 30% over the ten years, and its share in the world's oil production shrank from 34.1% to 23.4% as well. With 1982 as a border, the price set to fall, thereby the Middle Eastern oil production increased 1.6-fold by 2002 and the share recovered to 28.5%. Likewise, the African oil production, down by about 20% in ten years with the share shrinking from 10.7% to 8.2%, rebounded 1.7 times by 2002. The share also was restored to 10.6%. It is Latin America, West Europe and Asia/Pacific (this region alone marked a slower growth in the 1990s) that have been on the constant rise in the 30 years. Their shares in the world's total production, 6.0%, 0.8% and 5.1% respectively, expanded to 8.4%, 14.5% and 10.7% each 30 years later. East Europe/FSU on their part showed characteristic moves due to the shock of shattered socialism. In 1972-1982, their oil production grew 1.9 times and the share up from 15.9% to 22.9% of the world's total. But, after the socialist system fell apart, production plunged by about 40% in 20 years to 2002. The share slumped to 13.7% as well. In the point that a crude oil price rise has a positive effect on the former Soviet economies while a price fall a negative effect, the FSU region has interests common to oil-revenue-reliant producing countries, notably the OPEC.

Table 2 The Trends of Oil Production (Shares) by Area in the World

	1972	%	1982	%	1992	%	2002	%
North America	621.0	23.6	559.6	20.0	510.0	16.0	486.0	13.7
Latin America	255.6	9.7	329.9	11.8	400.2	12.6	514.1	14.5
Western Europe	22.3	0.8	147.5	5.3	213.6	6.7	296.8	8.3
Eastern Europe,FSU	419.7	15.9	639.6	22.9	482.0	15.1	487.4	13.7
Middle East	898.6	34.1	653.1	23.4	914.0	28.7	1,014.6	28.5
Africa	282.1	10.7	228.9	8.2	332.4	10.4	376.4	10.6
Asia Pacific	134.5	5.1	235.9	8.4	334.7	10.5	381.4	10.7
World Total	2,633.8	100.0	2,794.5	100.0	3,186.8	100.0	3,556.8	100.0

Fig.3 The Trends of Oil Production by Area in the World

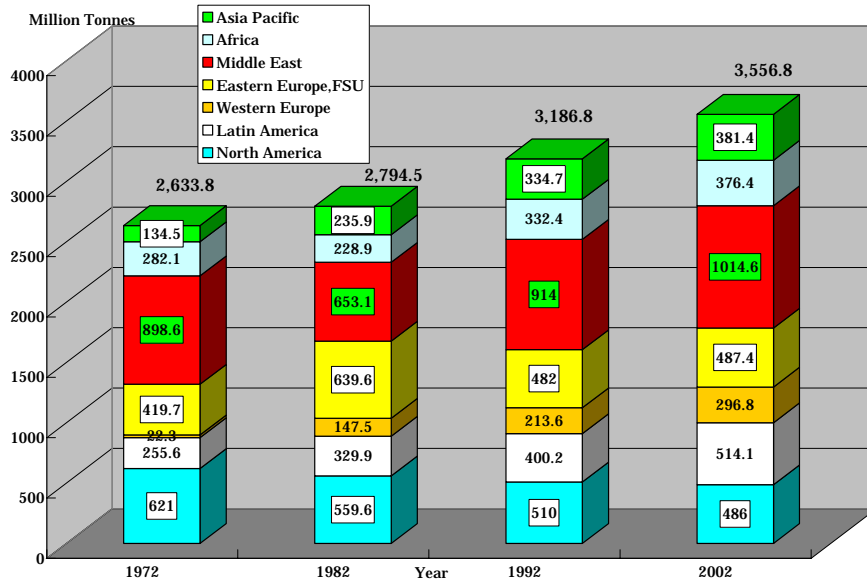
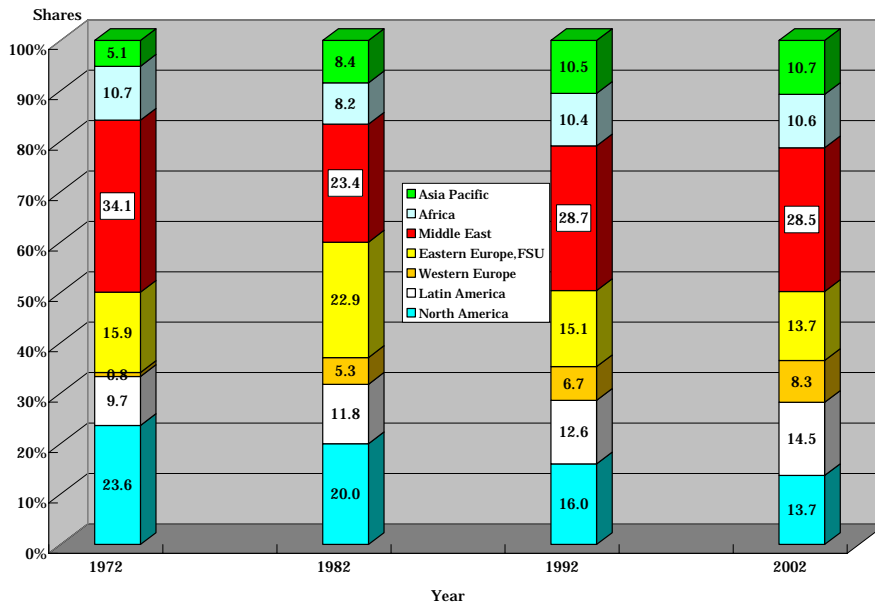


Fig.4 The Trends of Oil Production Shares by Area in the World



(2) Oil Consumption

The world's oil consumption also grew at an identical pace, up 1% a year on

average in 30 years of 1972-2002. The two oil crises during the 1970s had the gravest impacts on the advanced industrialized countries. Namely, oil consumption in North America dropped by about 10% in ten years of 1972-1982 and that in West Europe down by 15% or so, with their shares in the world shrinking from 33.3% and 27.1% each to 27.9% and 21.6% respectively. Japan's oil consumption dropped by about 20%. On the other hand, during 1972-1982 Latin America, the Middle East, Africa and developing areas in the Asia/Pacific had not been oil-dependent so much as severely hit by the oil crises. In the 30 years of 1972-2002 these regions all had their shares swelling from 6.0%, 2.2%, 1.7% and 15.8% (a total of 25.7%) to 8.4%, 5.9%, 3.4% and 28.2% (a total of 45.9%). East Europe/FSU consumed about 40% more oil than before during 1972-82 (with their world share up from 14.3% to 18.4%), which, however, conversely shrank by about 40% in 1992-2002 (with the world share down just half to 9.2%). These figures tell how terrific the economic shock of shattered socialism was.

Table 3 The Trends of Oil Consumption (Shares) by Area in the World

	1972	%	1982	%	1992	%	2002	%
North America	855.1	33.0	778.4	27.9	859.0	27.1	984.0	27.9
Latin America	154.5	6.0	214.7	7.7	246.9	7.8	295.7	8.4
Western Europe	701.8	27.1	601.6	21.6	650.5	20.5	599.8	17.0
Eastern Europe,FSU	370.1	14.3	512.2	18.4	412.0	13.0	325.4	9.2
Middle East	56.9	2.2	122.5	4.4	173.7	5.5	207.4	5.9
Africa	44.7	1.7	77.9	2.8	97.0	3.1	118.6	3.4
Asia Pacific	409.3	15.8	480.6	17.2	731.3	23.1	991.6	28.2
World Total	2,592.4	100.0	2,787.9	100.0	3,170.4	100.0	3,522.5	100.0

Fig. 5 The Trends of Oil Consumption by Area in the World

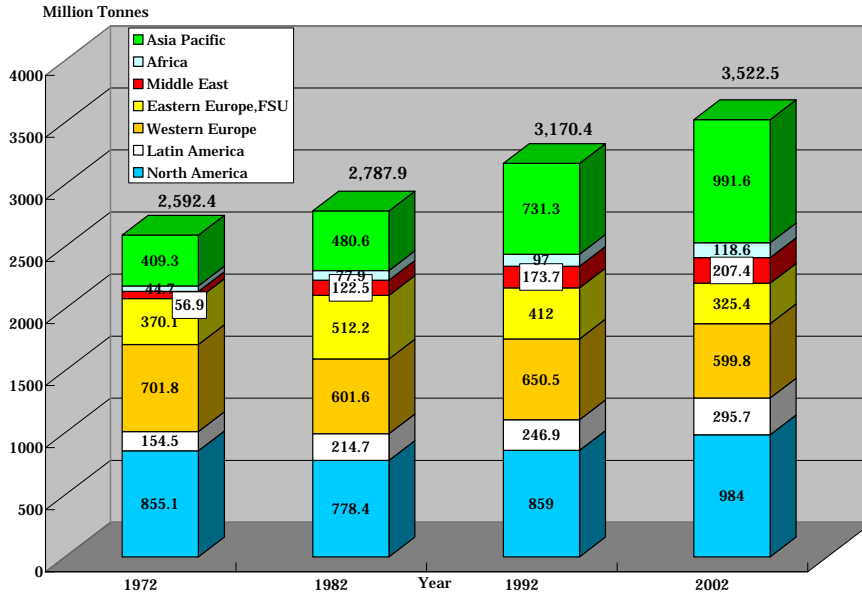
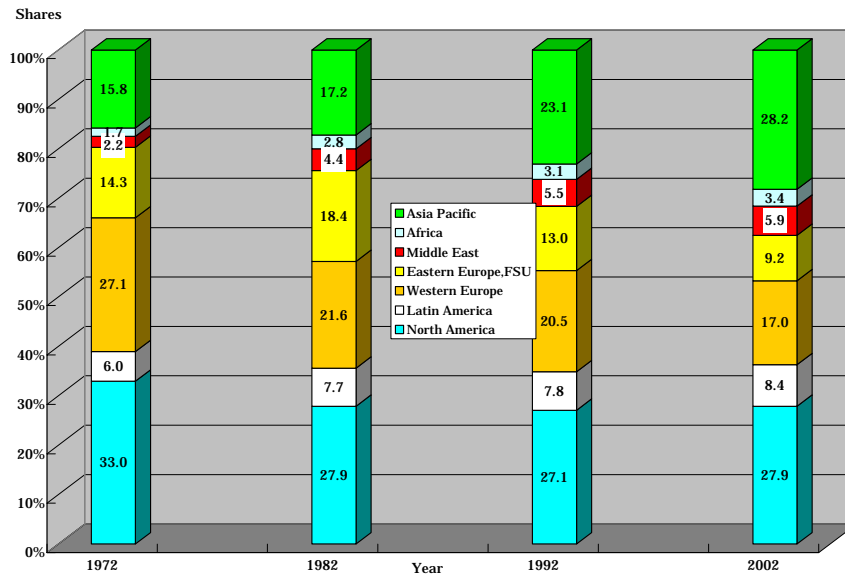


Fig. 6 The Trends of Oil Consumption Shares by Area in the World



3. Supply and Demand of Natural Gas

(1) Natural Gas Production

The world's natural gas production grew by an average 2.6%/year in 30 years of 1972-2002, thus growing at a nearly threefold faster tempo than the world's oil production did. However, just like oil production, the North American natural gas production entered the resource depletion period and its world share kept falling from 59.2% in 1972 to 39.6% a decade later, 31.4% two decades later, and 28.9% three decades later. It is the developing areas of Latin America, the Middle East, Africa and Asia/Pacific, that have been on the constant increase in 1972-2002, with their shares up from 6.0%, 2.2%, 1.7% and 15.8% (a total of 25.7%) to 8.4%, 5.9%, 3.4% and 28.2% (a total of 45.9%), respectively. The share of West Europe has remained virtually flat at around 10% throughout the 30 years. The share of East Europe/FSU surged from 22.5% in 1972 to 34% in 1982 and further to 37.6% in 1992, which, however, slumped to 28.4% in 2002 as a result of the collapse of socialist system. Because natural gas is produced nearer consuming areas (i.e. lesser trade) than oil, natural gas production trends are akin to its consumption moves.

Table 4 The Trends of Natural Gas Production (Shares) by Area in the World

	1972	%	1982	%	1992	%	2002	%
North America	626.4	59.2	522.9	39.6	578.1	31.4	658.1	28.9
Latin America	37.3	3.5	60.6	4.6	78.4	4.3	124.0	5.5
Western Europe	102.7	9.7	148.8	11.3	165.2	9.0	242.5	10.7
Eastern Europe,FSU	237.9	22.5	452.2	34.2	691.3	37.6	646.8	28.4
Middle East	24.2	2.3	36.7	2.8	102.7	5.6	212.0	9.3
Africa	5.8	0.5	30.8	2.3	67.7	3.7	119.9	5.3
Asia Pacific	23.4	2.2	68.6	5.2	157.1	8.5	271.4	11.9
World Total	1,057.7	100.0	1,320.6	100.0	1,840.5	100.0	2,274.7	100.0

Fig. 7 The Trends of Natural Gas Production by Area in the World

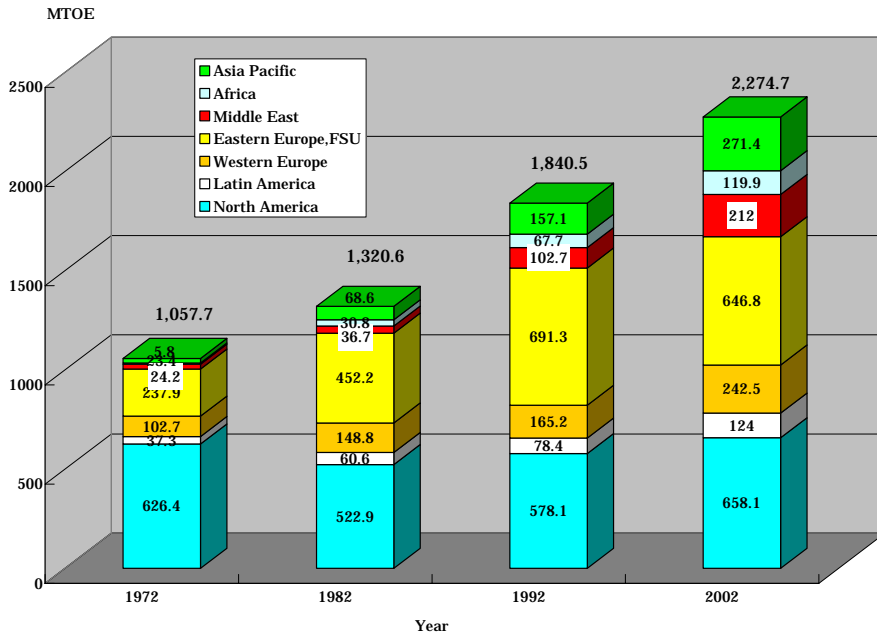
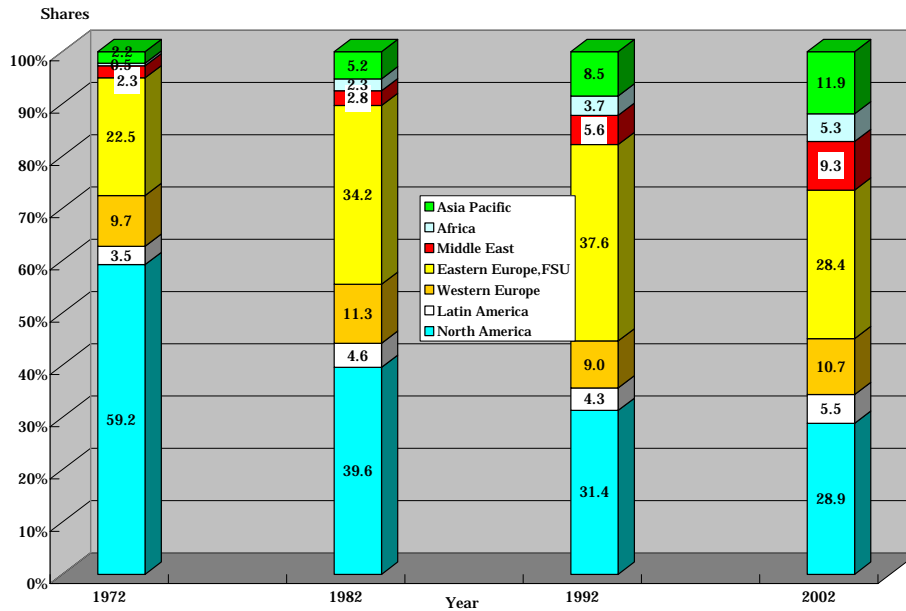


Fig. 8 The Trends of Natural Gas Production Shares by Area in the World



(2) Natural Gas Consumption

The share of North America in the world’s natural gas consumption, 60% in 1972, fell below 30% in 2002, or half of the 1972 level. On the other hand, in reflection to advancing oil-to-gas shifts, etc., West Europe boosted its share in the world’s natural gas consumption from 10.9% in 1972 to 16.0% by 2002. Developing areas of Latin America, the Middle East, Africa and Asia/Pacific each held 3.5%, 2.0%, 0.2% and 2.0% (a total of 7.7%) in 1972, which respectively expanded to 5.5%, 8.1%, 2.7% and 13.0% (a total of 29.3%) by 2002. East Europe/FSU, responsible for 21.4% of the world’s consumption in 1972, expanded its share to about one-thirds of the world in 1982-1992, which subsequently recoiled to one-fourths as a result of the breakup of the socialist system. By the way, comparing oil and natural gas consumption in equivalent heat quantity terms, the latter, having remained at one-fourths of the former in 1972, approached two-thirds of the former in 2002.

Table 5 The Trends of Natural Gas Consumption(Shares) by Area in the World

	1972	%	1982	%	1992	%	2002	%
North America	626.7	60.0	511.5	38.9	589.7	32.1	673.3	29.5
Latin America	36.4	3.5	61.1	4.6	80.8	4.4	126.1	5.5
Western Europe	113.5	10.9	181.1	13.8	253.6	13.8	365.1	16.0
Eastern Europe,FSU	224.0	21.4	441.6	33.6	615.0	33.5	574.4	25.2
Middle East	21.0	2.0	31.7	2.4	99.6	5.4	185.1	8.1
Africa	2.4	0.2	22.8	1.7	36.2	2.0	60.7	2.7
Asia Pacific	21.0	2.0	65.9	5.0	161.3	8.8	297.3	13.0
World Total	1,045.0	100.0	1,315.7	100.0	1,836.2	100.0	2,282.0	100.0

Fig. 9 The Trends of Natural Gas Consumption by Area in the World

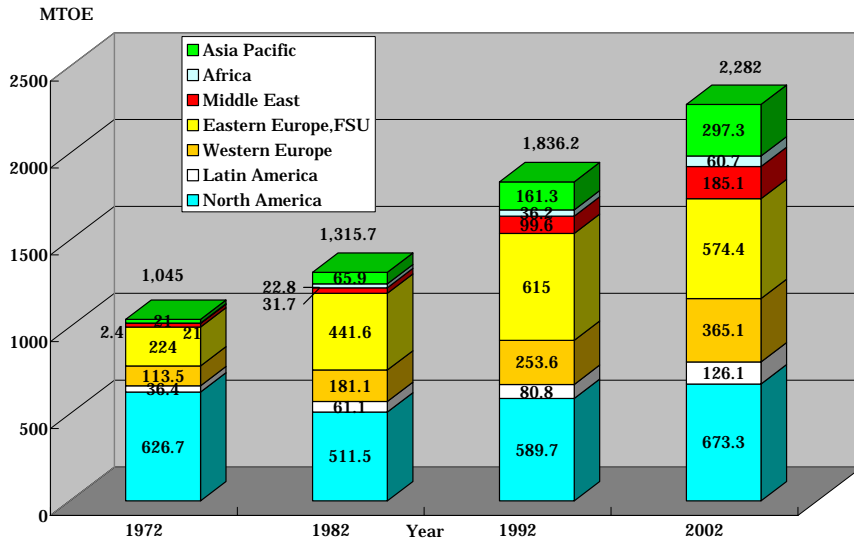
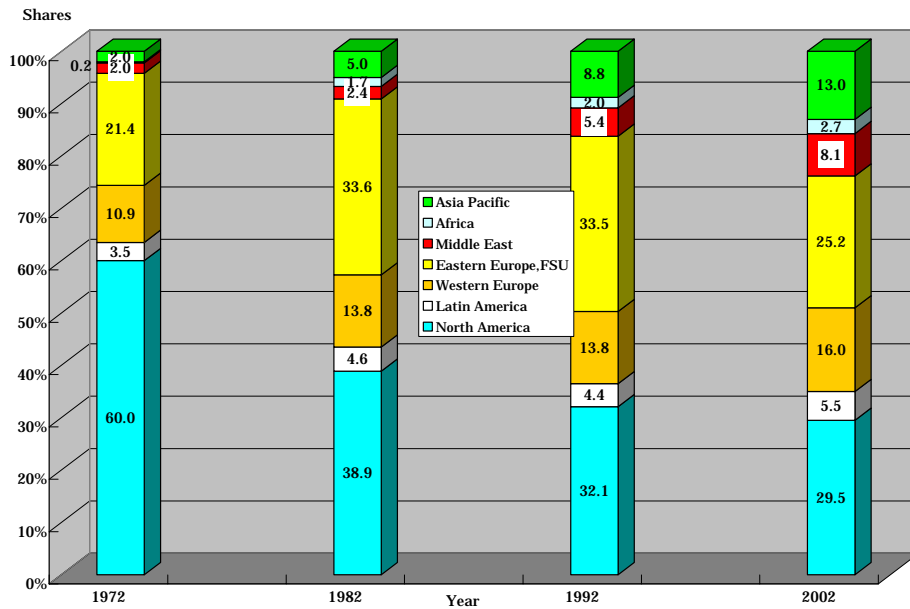


Fig. 10 The Trends of Natural Gas Consumption Shares by Area in the World



4. Supply and Demand of Coal

(1) Coal Production

The BP Statistics offers only as recent coal production data as from 1986 onward. In 1986-2002, coal production, up a mere 0.6%/year on average worldwide, grew by an average 3.5%/year in Asia/Pacific, of which share in the world, 31.5% in 1986, reached 49.4% in 2002, or about half of the world. The North American coal production increased by an average 1%/year in 1986-2002, with its world share up from 24.2% in 1986 to 25.5% in 2002. Conspicuous production declines were noted in East Europe/FSU as well as West Europe, where coal output dropped by an average 3.3%/year and 6.6%/year respectively in 1986-2002. Their shares, standing at 26.2% and 12.6% each in 1986, shrank to 13.9% and 3.8% by 2002.

Table 6 The Trends of Coal Production (Shares) by Area in the World

	1986	%	1992	%	2002	%
North America	520.2	24.2	575.8	26.1	607.2	25.5
Latin America	17.9	0.8	23.3	1.1	39.8	1.7
Western Europe	270.7	12.6	180.9	8.2	90.9	3.8
Eastern Europe,FSU	563.7	26.2	438.7	19.9	330.9	13.9
Middle East	1.0	0.0	0.6	0.0	0.4	0.0
Africa	99.2	4.6	105.0	4.8	130.6	5.5
Asia Pacific	677.5	31.5	880.4	39.9	1,179.6	49.6
World Total	2,150.2	100.0	2,204.7	100.0	2,379.4	100.0

Fig. 11 The Trends of Coal Production by Area in the World

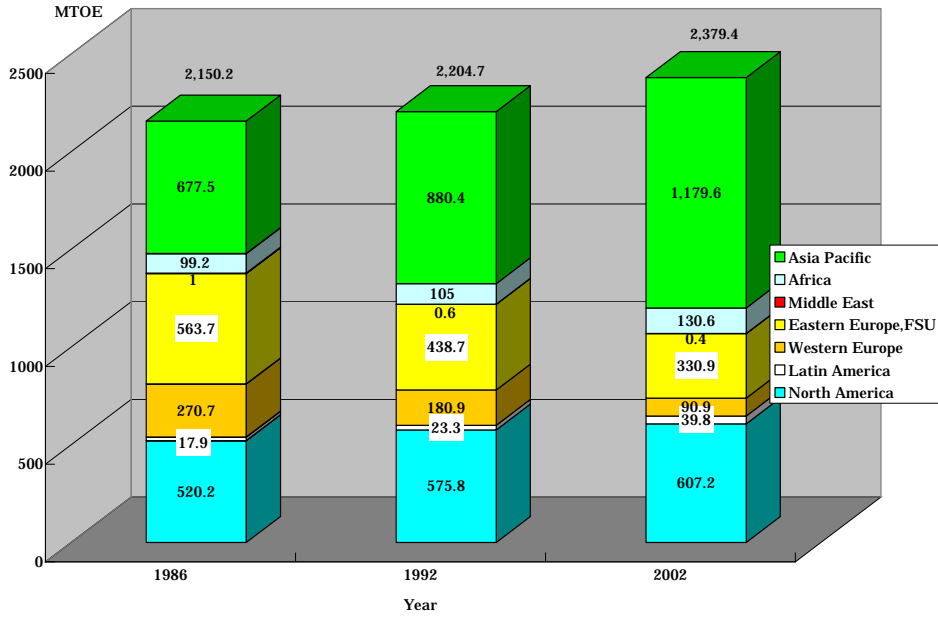
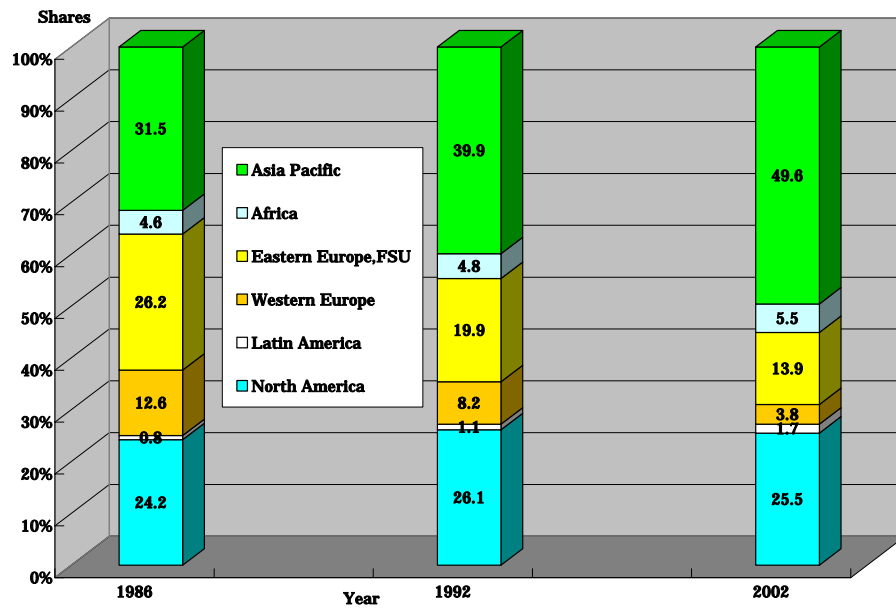


Fig. 12 The Trends of Coal Production Shares by Area in the World



(2) Coal Consumption

Compared with oil, coal too features that its producing and consuming areas are almost identical, which means limited trade between the areas. In the long run, energy shifts have been advancing from solids (coal) to fluids (oil) and further to gases (natural gas). Coal consumption increased a scant 0.3%/year on average in 30 years of 1972-2002. Yet, in Asia/Pacific, coal use grew by an average 3.4% yearly during the 30 years. In North America, it increased nearly 2%/year on average as well. In 1972 the world share of the former was 27.0% and that of the latter 20.4%, which rose to 49.4% and 24.4% respectively by 2002. On the other hand, in East Europe/FSU coal consumption fell 2.4%/year on average in 1972-2002, with its world share shrinking from 34.3% to 11.3%. It is West Europe that had a rising share during the oil-crisis days, which later shrank due to environmental constraints. That is, the West European share in the world, standing at 15.1% (1972) and 16.5% (1982), slipped to 12.7% (1992) and 9.8% (2002). The share of developing areas, with the three of Latin America, the Middle East and Africa combined, grew from 3.3% in 1972 to 5.2% in 2002.

Table 7 The Trends of Coal Consumption by Area in the World

	1972	%	1982	%	1992	%	2002	%
North America	331.8	20.4	410.4	21.8	508.1	23.1	584.5	24.4
Latin America	11.3	0.7	13.9	0.7	20.3	0.9	24.8	1.0
Western Europe	245.7	15.1	309.2	16.5	280.3	12.7	235.5	9.8
Eastern Europe,FSU	558.3	34.3	525.7	28.0	408.9	18.6	270.6	11.3
Middle East		0.0	1.1	0.1	4.3	0.2	8.4	0.4
Africa	42.5	2.6	76.8	4.1	74.8	3.4	90.6	3.8
Asia Pacific	439.8	27.0	541.2	28.8	906.1	41.1	1,183.5	49.4
World Total	1,629.4	100.0	1,878.3	100.0	2,202.8	100.0	2,397.9	100.0

Fig.13 The Trends of Coal Consumption by Area in the World

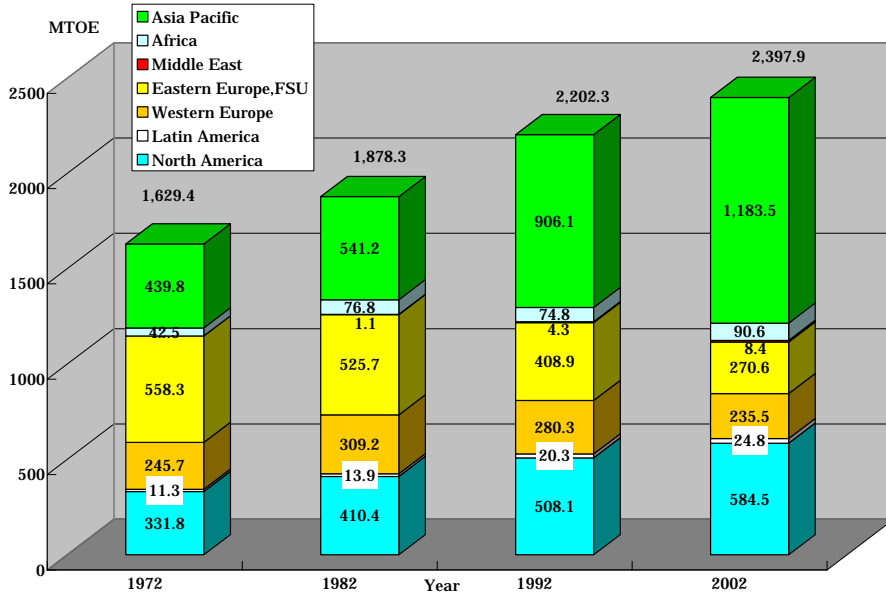
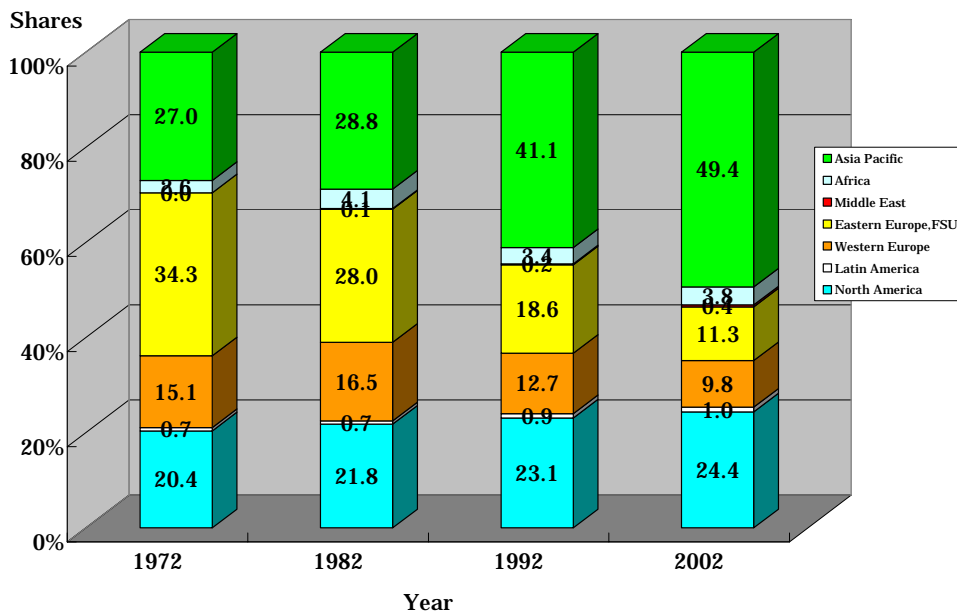


Fig. 14 The Trends of Coal Consumption Shares by Area in the World



5. Energy Trade

Among primary energy sources, those subject to cross-border transactions (trade) include oil, natural gas and coal. The BP Statistics does not cover coal trade. It is probably because accurate records of coal trade can hardly be grasped. Energy trade no doubt occupies a considerable portion of traded goods both in value and in volume, but regretfully it can hardly be grasped in statistical terms. Particularly oil is traded in huge quantities because its producing centers are located far from consuming areas.

(1) Oil Trade

About 60% of oil output are exported. In other words, about 60% of oil consumption are covered with imports. Of oil imports/exports, crude oil accounts for 76.7% and petroleum products the remaining 23.3% (2002). It is America and the rest of consuming areas, largely consisting of such developing countries as China and India, that recorded growing oil imports in terms of both volume and world share. The American oil imports increased by an average 3.0%/year in 30 years of 1972-2002, with its world share rising from 15.8% in 1972 to 26.0% in 2002. Oil imports by the rest of consuming areas increased by an average 2.9%/year in 30 years of 1972-2002, and the share up 21.6% to 35.1% over the same period. Oil imports by these two areas kept swelling even during 1972-1982 hit by the two oil crises. Oil imports by Europe and Japan declined by 30.9% and 13.2% each in 1972-1982. On top of economic stagnation, energy conservation and oil substitution, the sharp decline in Europe's oil imports reflected rising self-sufficiency thanks to the start of full-scale crude oil production in the North Sea. The world shares held by the two areas alike contracted from 46.7% and 15.9% each in 1972 to 27.3% and 11.6% by 2002. With these imports-growing and imports-falling areas combined, the world's oil imports dropped 13.8% in 1972-1982. But, having boosted later, the growth averaged 1.2%/year throughout 30 years of 1972-2002.

Table 8 The Trends of Oil Imports (Shares) by Area in the World

	1972	%	1982	%	1992	%	2002	%
USA	4,740.0	15.8	5,040.0	19.4	7,888.0	23.6	11,357.0	26.0
Europe	14,060.0	46.7	9,717.0	37.5	10,319.0	30.9	11,895.0	27.3
Japan	4,785.0	15.9	4,155.0	16.0	5,306.0	15.9	5,070.0	11.6
Others	6,510.0	21.6	7,020.0	27.1	9,884.0	29.6	15,306.0	35.1
World Total	30,095.0	100.0	25,932.0	100.0	33,397.0	100.0	43,628.0	100.0

Fig. 15 The Trends of Oil Imports by Area in the World

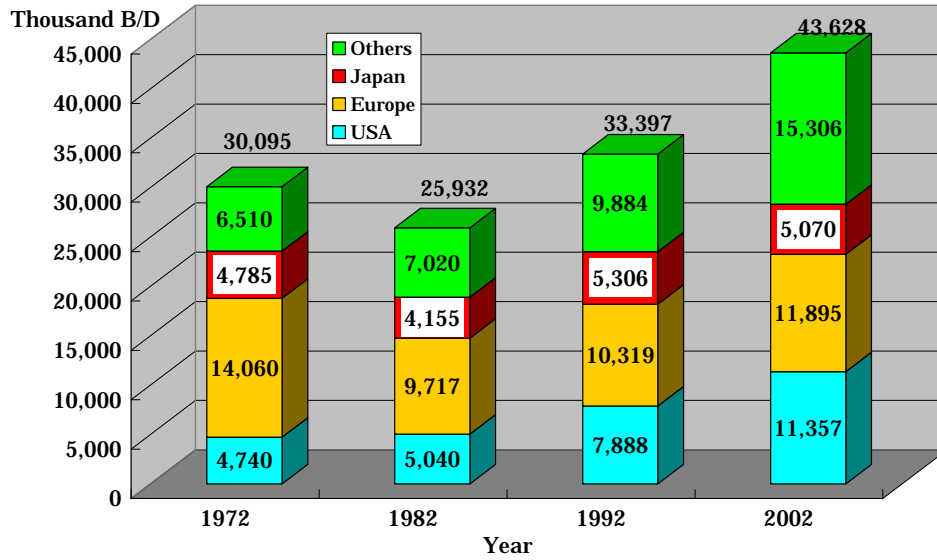
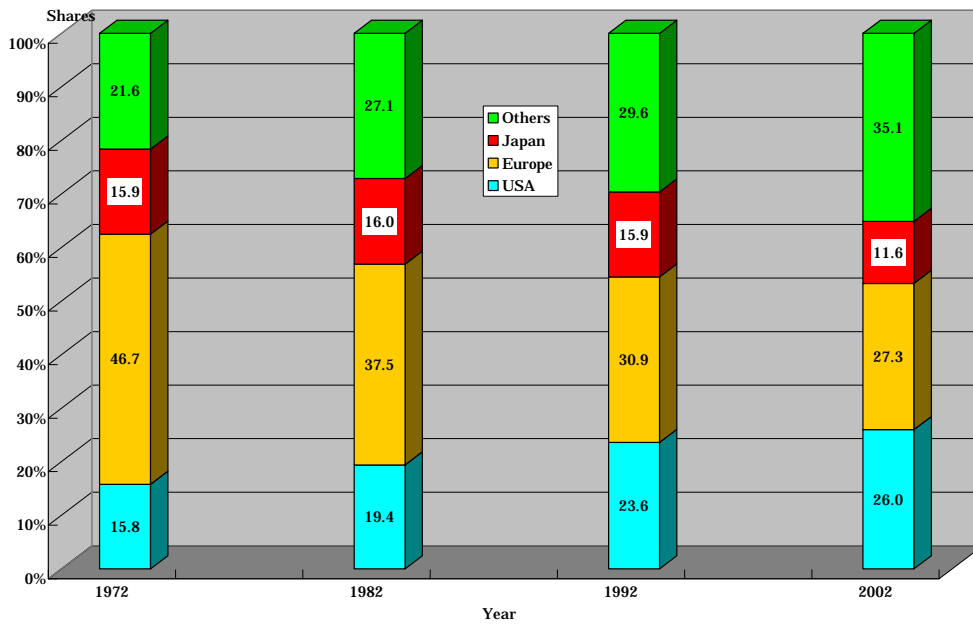


Fig. 16 The Trends of Oil Imports Shares by Area in the World



Oil trade is now examined from the oil-exporting side. In statistical terms, the

world's total oil imports equal the world's total oil exports. As a result of consuming countries' responses to the oil crises, combined with the policy of production curtailments taken by the OPEC, the Middle East and Africa where producing countries were situated came to hold lesser weight in the world's oil exports than before. Exports from the former Soviet area temporarily declined due to the demise of socialism. But, reflecting subsequent developments, like shrinking domestic consumption and stronger wills to earn hard currency by boosting exports, exports from this area have been on the sharp rise in recent years.

Exports from the Middle East plunged by 31.2% in 1972-1982, but later rebounded by 59.5% in 1982-2002. Its world share slumped from 56.3% in 1972 to 41.3% by 2002. Shipments from Africa slumped sharply by 32.4% in 1972-1982, then picked up as much as 57.9% in 1982-2002. Its world share fell from 17.9% in 1972 to 13.2% in 2002. Exports from the former Soviet area slightly more than doubled in 1972-1982, then, despite a 12.1% fall registered in 1982-1992 attributable to shattered socialism, rebounded by more than 2.3 times in 1992-2002. Its world share rose from 4.2% in 1972 to 12.2% by 2002.

Table 9 The Trends of Oil Exports(Shares) by Area in the World

	1972	%	1982	%	1992	%	2002	%
North America	1,310.0	4.4	1,300.0	5.0	2,019.0	6.0	2,863.0	6.6
Latin America	3,720.0	12.4	4,135.0	15.9	3,843.0	11.5	4,931.0	11.3
Western Europe	325.0	1.1	0.0	0.0	435.0	1.3	2,234.0	5.1
Eastern Europe,FSU	1,260.0	4.2	2,612.0	10.1	2,298.0	6.9	5,370.0	12.3
Middle East	16,950.0	56.3	11,660.0	45.0	15,453.0	46.3	18,062.0	41.3
Africa	5,390.0	17.9	3,645.0	14.1	5,093.0	15.2	5,754.0	13.2
Asia Pasific	1,090.0	3.6	1,550.0	6.0	2,414.0	7.2	2,863.0	6.6
Others	50.0	0.2	1,030.0	4.0	1,842.0	5.5	1,551.0	3.6
World Total	30,095.0	100.0	25,932.0	100.0	33,397.0	100.0	43,628.0	100.0

Fig. 17 The Trends of Oil Exports by Area in the World

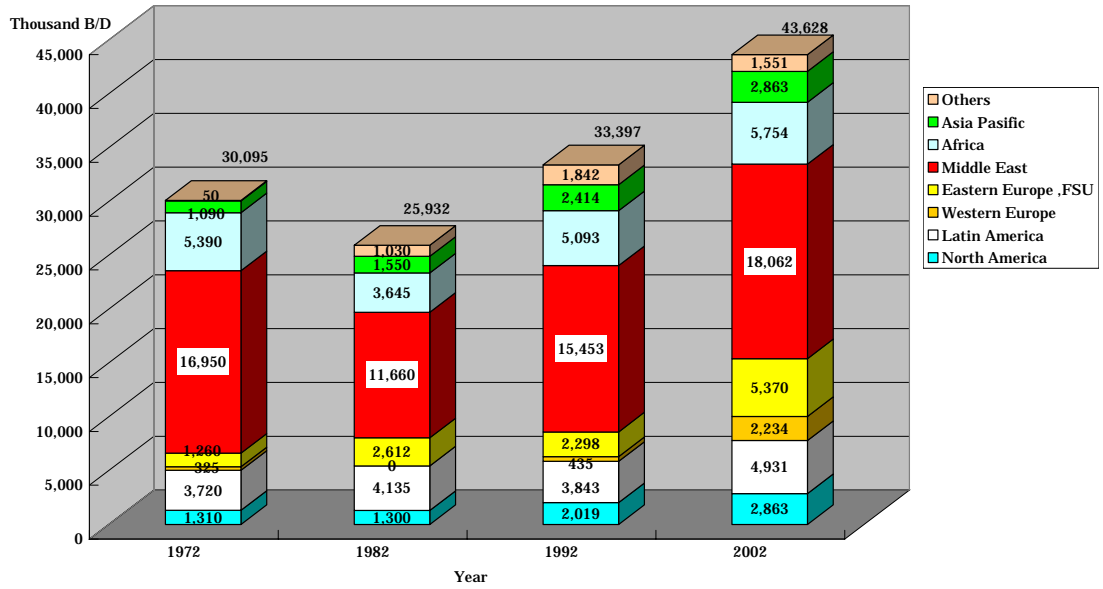
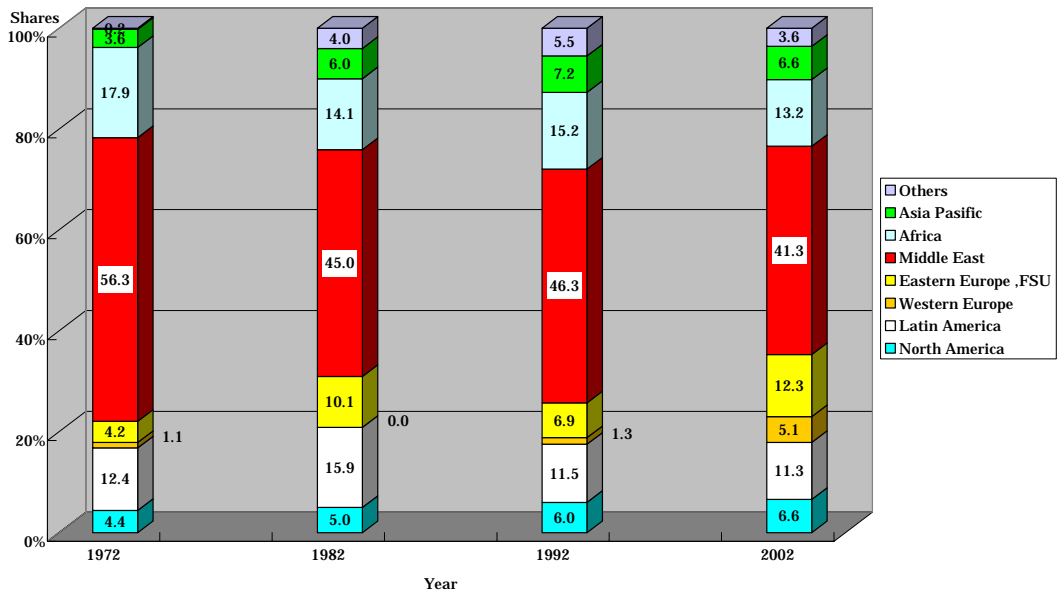


Fig. 18 The Trends of Oil Exports Shares by Area in the World



(2) Natural Gas Trade

Natural gas is traded in two ways, that is, through pipelines or by LNG tanker after liquefied. As of 2002, pipeline-based one accounts for three-fourths of total, and LNG tanker-based one the remaining one-fourth. Of natural gas produced in 2002, about 20% were exported. In case of the BP Statistics, natural gas trade statistics are available only from 1989 onward. In 1989-2002, natural gas trade (exports/imports) expanded by 5~6% a year on average. Imports expanded particularly at a faster tempo in America and Asia/Pacific, where imports surged by an average 8.7% and 7.0%/year respectively in 1989-2002. Their world shares increased from 13.4% and 16.2% each in 1989 to 17.3% and 17.6% in 1992 and further to 19.8% and 19.2%. Natural gas imports by West Europe grew 5.3%/year on average during the last 13 years, with its world share falling mildly from 49.9% in 1989 to 49.2% in 1992 and to 47.0% in 2002. The moderate fall can be attributed to increasing self-sufficiency of the North Sea natural gas production. Natural gas imports by East Europe from the former Soviet Union dropped due to rising prices, etc. after the FSU breakup. Later, the imports level was restored but remained flat as an underlying trend.

Table 10 The Trends of Natural Gas Imports(Shares) by Area in the World

	1989	%	1992	%	2002	%
USA	39.2	13.4	59.6	17.3	115.4	19.8
Canada	0.7	0.2	2.7	0.8	6.0	1.0
Latin America	2.3	0.8	5.0	1.5	17.9	3.1
Western Europe	143.0	49.9	169.5	49.2	273.0	47.0
Eastern Europe	50.0	17.5	36.4	10.6	50.9	8.8
Middle East	3.6	1.3	0.0	0.0	4.9	0.8
Africa	1.2	0.4	0.7	0.2	1.5	0.3
Asia Pasific	46.3	16.2	60.6	17.6	111.8	19.2
World Total	286.3	100.0	344.5	100.0	581.3	100.0

Fig. 19 The Trends of Natural Gas (Pipeline Gas +LNG) Imports by Area in the World

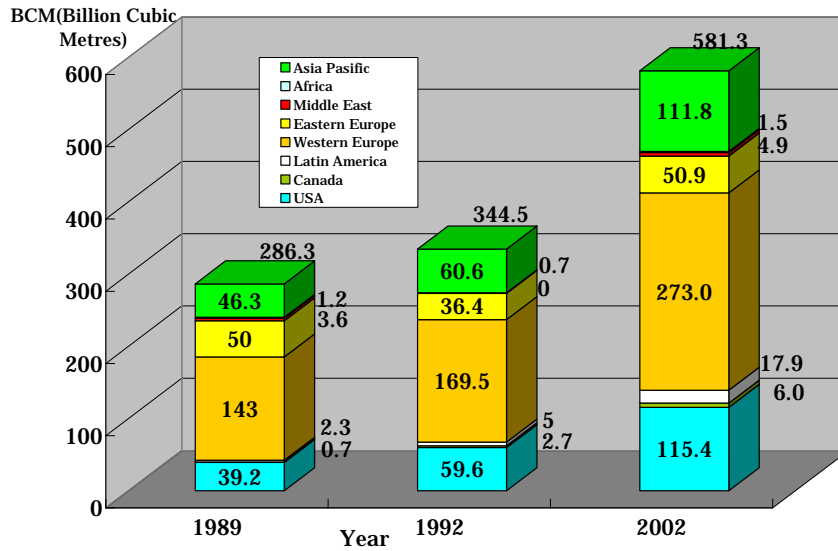
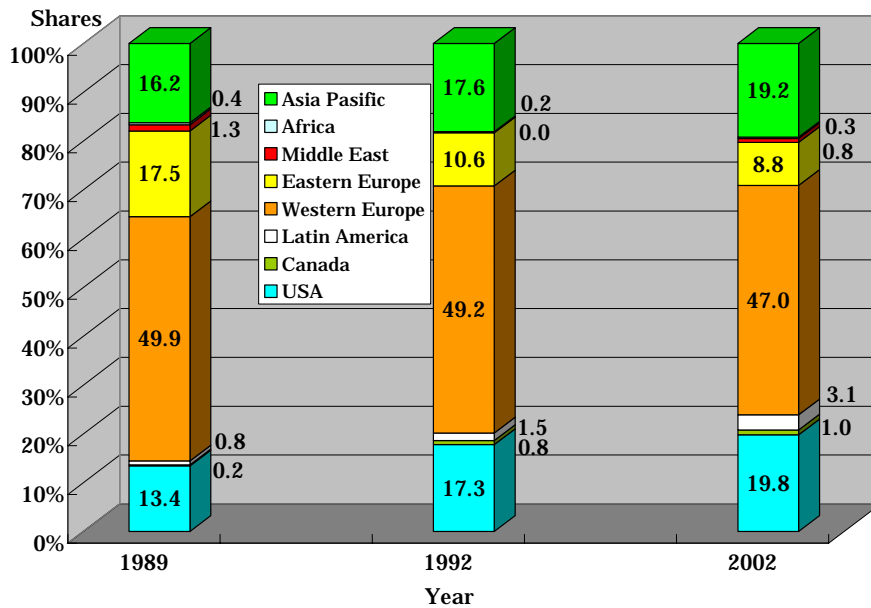


Fig. 20 The Trends of Natural Gas (Pipeline Gas +LNG) Imports Shares in the World



The world's total natural gas imports have expanded at the same tempo as the world's total natural gas exports. Natural gas exports from Canada grew 8.9%/year on average in 1989-2002. It was in a reverse relation to the soaring natural gas imports by America. Canada's share in the world's total exports jumped from 13.2% in 1989 to 18.7% in 2002. Natural gas exports from Asia/Pacific swelled 5.4%/year on average in 1989-2002. Its world share expanded from 14.5% in 1989 to 16.7% in 1992, but reversed to the 14% mark, or 14.1% by 2002. Natural gas exports from West Europe increased by an average 6.5%/year in 1989-2002, but its world share leveled off at 22%. The growth of natural gas exports from the FSU remained at 2.2%/year on average in 1989-2002, with its world share recoiling from 34.9% in 1989 to 22.9% by 2002. When combined, developing areas of Latin America, the Middle East and Africa had their world shares rising from 13.9% in 1989 to 19.9% in 2002.

Table 11 The Trends of Natural Gas Exports(Shares) by Area in the World

	1989	%	1992	%	2002	%
USA	2.0	0.7	6.9	2.1	15.1	2.6
Canada	37.9	13.2	58.3	17.4	108.8	18.7
Latin America	2.3	0.8	2.2	0.7	15.2	2.6
Western Europe	64.9	22.7	71.8	21.5	126.6	21.8
Eastern Europe	100.0	34.9	99.1	29.6	133.1	22.9
Middle East	6.7	2.3	3.4	1.0	34.1	5.9
Africa	30.9	10.8	37.0	11.1	66.2	11.4
Asia Pasific	41.6	14.5	55.8	16.7	82.2	14.1
World Total	286.3	100.0	334.5	100.0	581.3	100.0

Fig. 21 The Trends of Natural Gas (Pipeline Gas+LNG) Exports by Area in the World

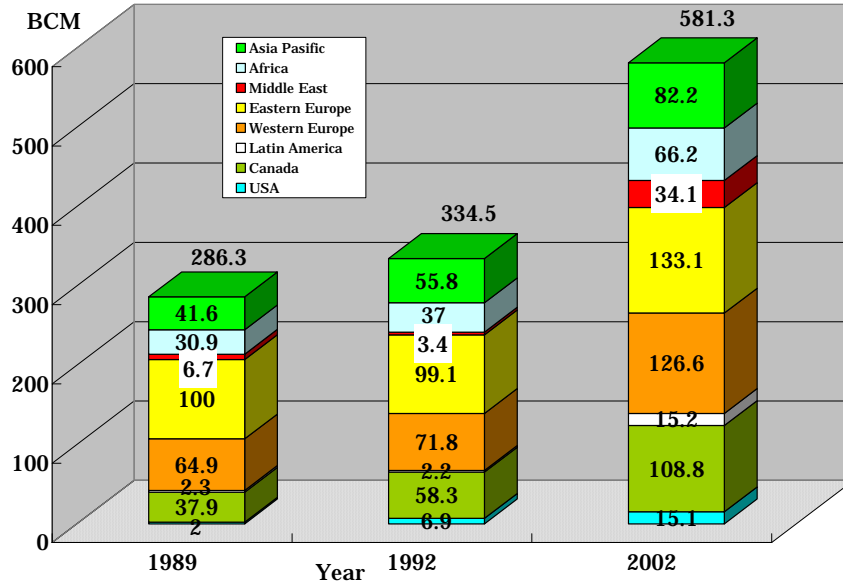
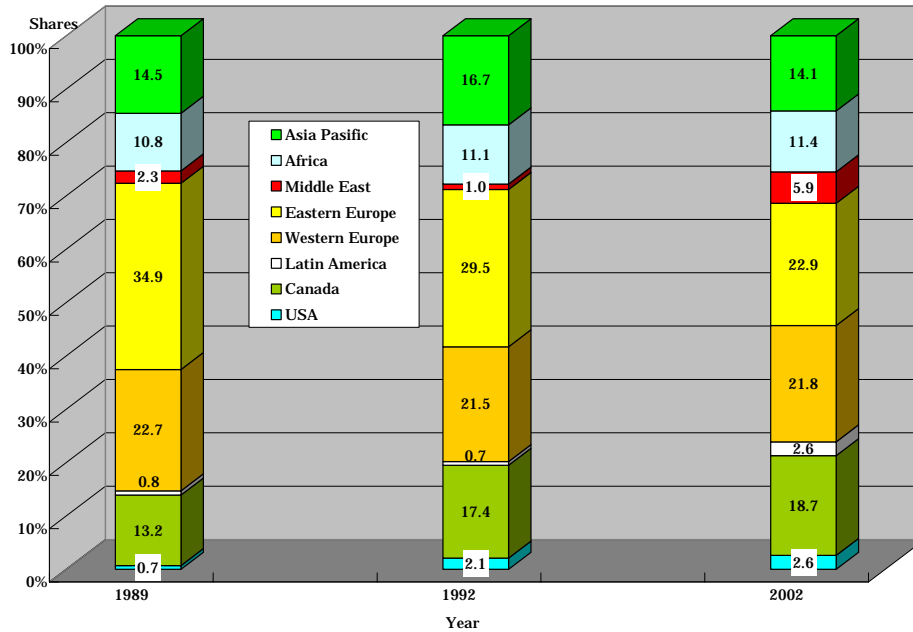


Fig. 22 The Trends of Natural Gas(Pipeline Gas +LNG) Exports Shares by Area in the World



Contact: ieej-info@tky.ieej.or.jp