
Energy and Related Products

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Change in 2004 from 2003:

U.S. trade deficit: Increased \$43.2 billion (33 percent) to \$173.8 billion

U.S. exports: Increased \$5.1 billion (31 percent) to \$21.8 billion

U.S. imports: Increased \$48.4 billion (33 percent) to \$195.6 billion

Historically, the United States has had a trade deficit in the energy sector. It is the world's largest consumer of energy products and a major importer. In 2004 the overall U.S. trade deficit in energy-related products increased 33 percent, largely because of increasing prices for crude petroleum and natural gas (table EP-1). World prices for crude petroleum fluctuated from an average of \$27.56 per barrel in 2003 to more than \$36.80 per barrel in 2004.¹ During the same period, U.S. natural gas prices increased from an average of \$4.88 per thousand cubic feet to \$5.49 per thousand cubic feet.²

The rise in crude petroleum prices is attributable to several factors, including continued tight supplies on the world market, reductions in spare production capacity, labor unrest in Venezuela and Nigeria, and a greater than anticipated increase in demand by China. Increased global demand for crude petroleum has outstripped the supply in recent years, decreasing spare production capacity. For example, in 2004 there was approximately 1.6–2.0 million barrels per day (b/d) of extra production capacity in the world, compared with 3 million b/d of excess capacity available in 2003.³

The energy-related products with the largest shifts (table EP-2) in terms of value included increased U.S. exports of petroleum products, coal, and natural gas and increased imports of crude petroleum, petroleum products, and natural gas. U.S. exports of coal rose 12 percent to 48 million short tons in 2004.⁴ U.S. imports of coal and coke increased 9 percent to 27 million short tons in 2004. Nearly all of the rise in imports was accounted for by increased imports of coke from China and coal from Indonesia shipped to the U.S. western coast.⁵

¹ Energy Information Administration (EIA), U.S. Department of Energy (DOE), "Energy Prices," found at <http://www.eia.doe.gov/price.html>, retrieved June 28, 2005.

² Ibid.

³ EIA, *Short-Term Energy Outlook, 2004*, Mar. 2005.

⁴ The United States accounts for the largest share of the world's recoverable coal reserves (25 percent) and is a major world exporter of coal.

⁵ Derived from official statistics. See EIA, *Short-Term Energy Outlook, 2004*.

Table EP-1

Energy-related products: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2000–2004¹

Item	2000	2001	2002	2003	2004	Change, 2004 from 2003	
						Absolute	Percent
Million dollars							
U.S. exports of domestic merchandise:							
Canada	2,896	3,862	2,889	4,296	5,754	1,458	33.9
Mexico	4,342	3,296	3,274	2,897	3,379	482	16.6
Venezuela	149	111	121	184	170	-13	-7.2
Saudi Arabia	42	37	34	38	48	9	24.6
Nigeria	17	24	37	22	28	6	27.6
United Kingdom	257	278	201	206	464	258	125.4
Iraq	0	0	0	(²)	(²)	(²)	379.0
Algeria	14	16	19	23	25	2	7.9
Russia	142	216	231	125	26	-100	-79.7
Angola	1	1	3	3	1	-2	-60.4
All other	7,669	7,231	7,622	8,843	11,887	3,044	34.4
Total	15,529	15,073	14,431	16,639	21,783	5,144	30.9
EU-15	2,072	2,146	1,731	1,714	3,068	1,354	79.0
OPEC	309	273	300	384	384	(²)	0.1
Latin America	6,422	5,161	5,290	6,159	7,249	1,090	17.7
CBERA	1,178	1,026	1,213	2,271	2,331	60	2.6
Asia	3,083	2,793	3,305	3,348	4,442	1,094	32.7
Sub-Saharan Africa	158	149	193	166	187	21	12.4
Central and Eastern Europe	70	40	30	50	102	52	104.8
U.S. imports of merchandise for consumption:							
Canada	31,860	34,598	29,903	41,579	49,278	7,699	18.5
Mexico	11,356	9,103	11,567	14,792	18,966	4,174	28.2
Venezuela	14,863	12,030	11,798	13,791	20,261	6,470	46.9
Saudi Arabia	12,478	10,625	10,264	14,538	17,851	3,312	22.8
Nigeria	8,706	8,627	5,773	10,028	16,233	6,205	61.9
United Kingdom	3,919	3,298	4,399	5,436	6,071	635	11.7
Iraq	4,148	3,735	2,748	3,297	6,496	3,199	97.0
Algeria	2,317	2,030	1,827	3,365	5,435	2,070	61.5
Russia	1,725	1,746	2,591	3,932	4,935	1,004	25.5
Angola	3,321	2,769	3,204	4,137	4,432	295	7.1
All other	27,956	25,665	25,726	32,288	45,596	13,308	41.2
Total	122,650	114,226	109,800	147,183	195,553	48,370	32.9
EU-15	8,338	7,614	8,778	11,453	15,007	3,555	31.0
OPEC	45,389	39,424	34,506	47,416	69,981	22,564	47.6
Latin America	35,997	29,945	32,598	41,240	56,061	14,821	35.9
CBERA	3,117	2,689	2,900	4,600	6,342	1,743	37.9
Asia	3,021	2,720	2,284	2,611	3,928	1,317	50.4
Sub-Saharan Africa	15,016	14,271	11,713	17,674	26,299	8,624	48.8
Central and Eastern Europe	5	131	201	168	233	65	38.7

See footnote(s) at end of table.

Table EP-1—Continued

Energy-related products: U.S. exports of domestic merchandise, imports for consumption, and merchandise trade balance, by selected countries and country groups, 2000–2004¹

Item	2000	2001	2002	2003	2004	Change, 2004 from 2003	
						Absolute	Percent
Million dollars							
U.S. merchandise trade balance:							
Canada	-28,964	-30,736	-27,014	-37,283	-43,524	-6,241	-16.7
Mexico	-7,014	-5,807	-8,294	-11,894	-15,587	-3,693	-31.0
Venezuela	-14,714	-11,919	-11,677	-13,607	-20,090	-6,483	-47.6
Saudi Arabia	-12,436	-10,588	-10,230	-14,500	-17,803	-3,303	-22.8
Nigeria	-8,690	-8,603	-5,736	-10,006	-16,205	-6,199	-62.0
United Kingdom	-3,662	-3,020	-4,197	-5,230	-5,607	-377	-7.2
Iraq	-4,148	-3,735	-2,748	-3,297	-6,495	-3,199	-97.0
Algeria	-2,303	-2,014	-1,808	-3,342	-5,410	-2,068	-61.9
Russia	-1,583	-1,531	-2,360	-3,806	-4,910	-1,104	-29.0
Angola	-3,320	-2,767	-3,201	-4,133	-4,430	-297	-7.2
All other	-20,287	-18,434	-18,103	-23,445	-33,709	-10,264	-43.8
Total	-107,121	-99,153	-95,369	-130,544	-173,770	-43,226	-33.1
EU-15	-6,266	-5,468	-7,048	-9,738	-11,939	-2,201	-22.6
OPEC	-45,080	-39,152	-34,206	-47,033	-69,596	-22,564	-48.0
Latin America	-29,575	-24,784	-27,308	-35,081	-48,812	-13,731	-39.1
CBERA	-1,939	-1,664	-1,687	-2,328	-4,011	-1,683	-72.3
Asia	62	73	1,022	737	514	-223	-30.2
Sub-Saharan Africa	-14,859	-14,122	-11,520	-17,508	-26,112	-8,604	-49.1
Central and Eastern Europe	65	-91	-171	-118	-131	-13	-10.8

¹Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.

²Less than \$500,000.

Note.—Calculations based on unrounded data. The countries shown are those with the largest total U.S. trade (U.S. imports plus exports) in these products in 2004.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table EP-2
Leading changes in U.S. exports and imports of energy-related products, 2000–2004¹

Industry/commodity group	2000	2001	2002	2003	2004	Change, 2004 from 2003						
						Absolute	Percent					
<i>Million dollars</i>												
U.S. EXPORTS:												
Increases:												
Petroleum products (CH005)	9,562	8,936	8,662	9,783	12,651	2,868	29.3					
Coal, coke, and related chemical products (CH003) ...	2,718	2,354	2,188	2,360	3,556	1,197	50.7					
Natural gas and components (CH006)	1,286	1,109	1,675	2,074	2,906	832	40.1					
Crude petroleum (CH004)	444	177	92	155	265	110	71.1					
All other	1,519	2,497	1,813	2,267	2,404	137	6.0					
TOTAL	15,529	15,073	14,431	16,639	21,783	5,144	30.9					
U.S. IMPORTS:												
Increases:												
Crude petroleum (CH004)	56,546	49,673	54,704	73,527	100,338	26,811	36.5					
Petroleum products (CH005)	39,787	34,372	30,594	37,280	51,579	14,299	38.4					
Natural gas and components (CH006)	19,157	23,054	18,609	28,885	34,195	5,311	18.4					
Decreases:												
Electrical energy (CH001)	2,711	2,681	1,160	1,382	1,261	-120	-8.7					
All other	4,450	4,447	4,734	6,109	8,179	2,071	33.9					
TOTAL	122,650	114,226	109,800	147,183	195,553	48,370	32.9					

¹Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.

Note.—Calculations based on unrounded data.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Crude Petroleum

Change in 2004 from 2003:

U.S. trade deficit: Increased \$26.7 billion (36 percent) to \$100.1 billion

U.S. exports: Increased \$0.1 billion (71 percent) to \$0.3 billion

U.S. imports: Increased \$26.8 billion (37 percent) to \$100.3 billion

The U.S. trade deficit in crude petroleum increased in 2004, largely because of rising crude petroleum prices, which increased from an average of \$27.56 per barrel in 2003 to \$36.80 per barrel in 2004.⁶ World prices for crude petroleum increased as a result of a combination of factors, primarily increased demand coupled with tight supplies (which resulted in lower U.S. inventories), reduced production by OPEC countries (especially in Venezuela and Iraq), and a significant rise in Chinese demand.⁷

U.S. exports

The quantity of U.S. crude petroleum exports increased from 12,000 b/d in 2003 to 27,000 b/d in 2004.⁸ Historically, Canada, which accounted for 99 percent of the total quantity of U.S. crude petroleum exports in 2004, has been the only consistent market for these exports, with the level of exports fluctuating based on refinery needs on either side of the border.

U.S. imports

U.S. imports of crude petroleum rose 3 percent, from 9.7 million b/d in 2003 to 10.0 million b/d in 2004. In terms of quantity, Canada, Mexico, Nigeria, Venezuela, and Saudi Arabia were the leading sources of U.S. imports of crude petroleum in 2004. OPEC, which accounts for nearly 70 percent of the world's reserves and 40 percent of the world's production of crude petroleum, was again the largest supplier to the U.S. market, accounting for 50 percent of total U.S. imports of crude petroleum. U.S. imports of crude petroleum continued to account for more than 60 percent of domestic consumption as demand for crude petroleum increased and U.S. production continued to decline.⁹

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⁶ EIA, "Energy Prices."

⁷ EIA, *Short-Term Energy Outlook, 2004*.

⁸ U.S. exports of crude petroleum have been prohibited since 1973, except as approved by the U.S. Government. Canada has been the only consistent market for these exports, which are part of a commercial exchange agreement between U.S. and Canadian refiners that has been approved by the Secretary of the U.S. Department of Energy. In May 1996, the President determined that allowing exports of Alaskan North Slope (ANS) crude was in the national interest, thus ending the 23-year ban on ANS crude exports. However, the President can impose new export restrictions in the event of severe crude petroleum supply shortages.

⁹ U.S. imports of crude petroleum began to increase in 1985 when declining world crude prices resulted in the reduced profitability of certain high cost U.S. stripper wells, many of which were shut down.

Petroleum Products

Change in 2004 from 2003:

U.S. trade deficit: Increased \$11.4 billion (42 percent) to \$38.9 billion

U.S. exports: Increased \$2.9 billion (29 percent) to \$12.7 billion

U.S. imports: Increased \$14.3 billion (38 percent) to \$51.6 billion

The U.S. trade deficit in petroleum products increased in 2004, largely as a result of the rise in the average per barrel price for crude petroleum on the world market. The United States is a major world producer and consumer of petroleum products.

U.S. exports

In terms of quantity, U.S. exports of petroleum products are minimal and accounted for less than 5 percent (1.0 million b/d) of total U.S. production of petroleum products in 2004. The quantity of U.S. exports of petroleum products, primarily distillate and residual fuel oils to Mexico and Canada, increased by less than 1 percent (7,000 b/d) in 2004.

U.S. imports

Although the value of U.S. imports of petroleum products in 2004 increased 38 percent from 2003 levels, the quantity of these imports only increased 9 percent to 2.9 million b/d in 2004. U.S. imports of petroleum products, on average, account for less than 10 percent of domestic consumption. The primary sources of U.S. imports of petroleum products in 2004 continued to be Canada, Venezuela, and Saudi Arabia. The quantity of U.S. imports of distillate and residual fuel oils, used primarily as heating, bunker, and diesel fuels, accounted for nearly all of the quantity increase in U.S. imports. Increased demand for these fuels in 2004 was due to growth in the industrial sector and on-highway diesel fuel consumption coupled with a cold winter in the northeastern United States.¹⁰

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¹⁰ EIA, *Short-Term Energy Outlook, 2004*.

Natural Gas and Components

Change in 2004 from 2003:

U.S. trade deficit: Increased \$4.5 billion (17 percent) to \$31.3 billion

U.S. exports: Increased \$0.8 billion (40 percent) to \$2.9 billion

U.S. imports: Increased \$5.3 billion (18 percent) to \$34.2 billion

The trade deficit for natural gas and components increased primarily because of the rise in the price of natural gas in 2004. The price of natural gas rose from an average of \$4.88 per thousand cubic feet in 2003 to \$5.49 per thousand cubic feet in 2004¹¹ because of continued tight supplies and low inventories. Most U.S. trade in natural gas is via pipelines shared with Canada and, to a lesser extent, Mexico, with imports and exports fluctuating based on market availability along the pipeline. Liquefied natural gas (LNG) is also traded, accounting for a much smaller share of total trade.

U.S. exports

U.S. exports of natural gas and components account for a minimal share of U.S. production. The quantity of exports of natural gas and components increased 67 billion cubic feet (10 percent) to 759 billion cubic feet in 2004. U.S. exports of pipeline natural gas accounted for about 95 percent of total U.S. exports in this sector in 2004, with Canada being the primary market; LNG exports to Japan accounted for the remaining 5 percent of total U.S. natural gas exports.

U.S. imports

U.S. imports of natural gas and components increased by about 5 percent to 4.2 trillion cubic feet in 2004, of which 85 percent was pipeline natural gas and 15 percent was LNG from Trinidad and Tobago as well as Algeria. Canada accounted for 3.5 trillion cubic feet, or 99 percent, of U.S. imports of pipeline natural gas in 2004, with Mexico accounting for the other 1 percent (100 billion cubic feet).

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¹¹ EIA, "Energy Prices."

Table EP-3
Energy-related products: U.S. trade for industry/commodity groups and subgroups, 2000–2004¹

USITC code ²	Industry/commodity group	2000	2001	2002	2003	2004	Change, 2004 from 2003	
							Absolute	Percent
					<i>Million dollars</i>			
CH001	Electrical energy:							
	Exports	398	1,258	304	716	829	113	15.8
	Imports	2,711	2,681	1,160	1,382	1,261	-120	-8.7
	Trade balance	-2,313	-1,423	-857	-666	-432	233	35.0
CH002	Nuclear materials:							
	Exports	1,121	1,239	1,510	1,551	1,575	24	1.5
	Imports	1,989	2,036	2,144	2,892	2,625	-267	-9.2
	Trade balance	-868	-797	-635	-1,341	-1,050	291	21.7
CH003	Coal, coke, and related chemical products:							
	Exports	2,718	2,354	2,188	2,360	3,556	1,197	50.7
	Imports	2,460	2,411	2,589	3,217	5,555	2,338	72.7
	Trade balance	257	-57	-401	-857	-1,998	-1,141	-133.1
CH004	Crude petroleum:							
	Exports	444	177	92	155	265	110	71.1
	Imports	56,546	49,673	54,704	73,527	100,338	26,811	36.5
	Trade balance	-56,103	-49,496	-54,612	-73,372	-100,073	-26,701	-36.4
CH005	Petroleum products:							
	Exports	9,562	8,936	8,662	9,783	12,651	2,868	29.3
	Imports	39,787	34,372	30,594	37,280	51,579	14,299	38.4
	Trade balance	-30,224	-25,436	-21,931	-27,497	-38,928	-11,430	-41.6
CH006	Natural gas and components:							
	Exports	1,286	1,109	1,675	2,074	2,906	832	40.1
	Imports	19,157	23,054	18,609	28,885	34,195	5,311	18.4
	Trade balance	-17,870	-21,944	-16,934	-26,811	-31,289	-4,479	-16.7

¹Import values are based on customs value; export values are based on f.a.s. value, U.S. port of export.

²This coding system is used by the U.S. International Trade Commission to identify major groupings and subgroupings of HTS import and export items for trade monitoring purposes

Note.—Calculations based on unrounded data.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table EP-4

Energy-related products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2000–2004

USITC code	Industry/commodity group	2000	2001	2002	2003	2004	Percent change, 2004 from 2003
CH001	Electrical energy:						
	Number of establishments	3,225	3,225	3,225	3,225	3,225	0.0
	Employees (thousands)	(¹)					
	Capacity utilization (percent)	100	100	100	100	100	0.0
	U.S. shipments (million dollars)	218,610	220,824	229,664	340,400	316,600	-7.0
	U.S. exports (million dollars)	398	1,258	304	716	829	15.8
	U.S. imports (million dollars)	2,711	2,681	1,160	1,382	1,261	(²)
	Apparent U.S. consumption (million dollars)	220,923	222,247	230,521	341,066	317,032	-7.0
	Trade balance (million dollars)	-2,313	-1,423	-857	-666	-432	35.0
	Ratio of imports to consumption (percent)	1.2	1.2	0.5	0.4	0.4	0.0
	Ratio of exports to shipments (percent)	0.2	0.6	0.1	0.2	0.3	50.0
CH003	Coal, coke, and related chemical products:						
	Number of establishments	520	520	520	520	520	0.0
	Employees (thousands)	150.0	150.0	150.0	150.0	150.0	0.0
	Capacity utilization (percent)	90	90	90	90	90	0.0
	U.S. shipments (million dollars)	32,606	34,320	38,496	36,582	35,120	-4.0
	U.S. exports (million dollars)	2,718	2,354	2,188	2,360	3,556	50.7
	U.S. imports (million dollars)	2,460	2,411	2,589	3,217	5,555	72.7
	Apparent U.S. consumption (million dollars)	32,349	34,377	38,897	37,439	37,118	-0.9
	Trade balance (million dollars)	257	-57	-401	-857	-1,998	-133.1
	Ratio of imports to consumption (percent)	7.6	7.0	6.7	8.6	15.0	74.4
CH004	Crude petroleum:						
	Number of establishments	18,000	18,000	18,000	18,000	18,000	0.0
	Employees (thousands)	204.0	204.0	204.0	204.0	204.0	0.0
	Capacity utilization (percent)	100	100	100	100	100	0.0
	U.S. shipments (million dollars)	57,499	46,960	55,203	57,550	73,334	27.4
	U.S. exports (million dollars)	444	177	92	155	265	71.1
	U.S. imports (million dollars)	56,546	49,673	54,704	73,527	100,338	36.5
	Apparent U.S. consumption (million dollars)	113,602	96,456	109,815	130,922	173,407	32.5
	Trade balance (million dollars)	-56,103	-49,496	-54,612	-73,372	-100,073	-36.4
	Ratio of imports to consumption (percent)	49.8	51.5	49.8	56.2	57.9	3.0
	Ratio of exports to shipments (percent)	0.8	0.4	0.2	0.3	0.4	33.3

See footnote(s) at end of table.

Table EP-4—Continued

Energy-related products sector: Profile of U.S. industry and market, by industry/commodity groups and subgroups, 2000–2004

USITC code	Industry/commodity group	2000	2001	2002	2003	2004	Percent change, 2004 from 2003
CH005	Petroleum products:						
	Number of establishments	190	190	190	190	190	0.0
	Employees (thousands)	75.0	75.0	75.0	75.0	75.0	0.0
	Capacity utilization (percent)	90	90	90	90	90	0.0
	U.S. shipments (million dollars)	213,475	140,162	193,710	200,475	280,500	39.9
	U.S. exports (million dollars)	9,562	8,936	8,662	9,783	12,651	29.3
	U.S. imports (million dollars)	39,787	34,372	30,594	37,280	51,579	38.4
	Apparent U.S. consumption (million dollars)	243,699	165,598	215,641	227,972	319,428	40.1
	Trade balance (million dollars)	-30,224	-25,436	-21,931	-27,497	-38,928	-41.6
	Ratio of imports to consumption (percent)	16.3	20.8	14.2	16.4	16.1	-1.8
	Ratio of exports to shipments (percent)	4.5	6.4	4.5	4.9	4.5	-8.2
CH006	Natural gas and components:						
	Number of establishments	(¹)					
	Employees (thousands)	200.0	200.0	200.0	200.0	200.0	0.0
	Capacity utilization (percent)	80	80	80	80	80	0.0
	U.S. shipments (million dollars)	120,000	150,000	115,000	165,000	174,000	5.5
	U.S. exports (million dollars)	1,286	1,109	1,675	2,074	2,906	40.1
	U.S. imports (million dollars)	19,157	23,054	18,609	28,885	34,195	18.4
	Apparent U.S. consumption (million dollars)	137,870	171,944	131,934	191,811	205,289	7.0
	Trade balance (million dollars)	-17,870	-21,944	-16,934	-26,811	-31,289	-16.7
	Ratio of imports to consumption (percent)	13.9	13.4	14.1	15.1	16.7	10.6
	Ratio of exports to shipments (percent)	1.1	0.7	1.5	1.3	1.7	30.8

¹ Not available.² Less than 0.05 percent.

Note.—Calculations based on unrounded data.

Source: These data have been estimated by the Commission's international trade analysts on the basis of primary and secondary data sources including discussions with various Government and industry contacts. These estimated data are subject to change either from secondary sources or from detailed surveys the Commission often conducts in the course of statutory investigations or other work. Further, these data may undergo adjustments based on revisions in tariff nomenclature, classification practices, or redefinitions of industry classes.