August 2002

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Ukraine

Ukraine is important to world energy markets because it is a critical transit center for exports of Russian oil and natural gas to Europe, as well as a major energy producer and consumer in its own right.

Information contained in this report is the best available as of August 2002 and is subject to change.

GENERAL BACKGROUND

Following eight consecutive years of recession, Ukraine experienced its second straight year of economic growth in 2001. Fueled by increases in industrial production and a strong harvest, Ukraine's real gross domestic product rose an impressive 8.9% in 2001, improving on the 5.8% GDP expansion in 2000. Although growth has slowed somewhat in 2002, analysts are still projecting Ukraine's economy to increase by 5.6% overall this year.

Although Ukraine has witnessed a substantial cooling of inflation (6% in 2001, down from 25.8% in 2000) and there has been a marked drop in unemployment, in many ways Ukraine remains mired in the transition from a centrally-planned economic system to a market economy. While the country's recent economic gains appear to signal that Ukraine has turned the corner, the government remains burdened by a 12 billion foreign debt that is continuing to increase.

In addition, the confusing web of tax requirements and excessive state interference in the private sector has contributed to a poor investment climate, and the pace of reforms has slowed considerably since Victor Yushchenko was ousted as Prime Minister in April 2001. Yushchenko, a former chairman of the National Bank of Ukraine, pushed through a number of economic reforms during his time in office before he lost a parliamentary vote of no-confidence in Ukraine's parliament, the Verkhovna Rada.

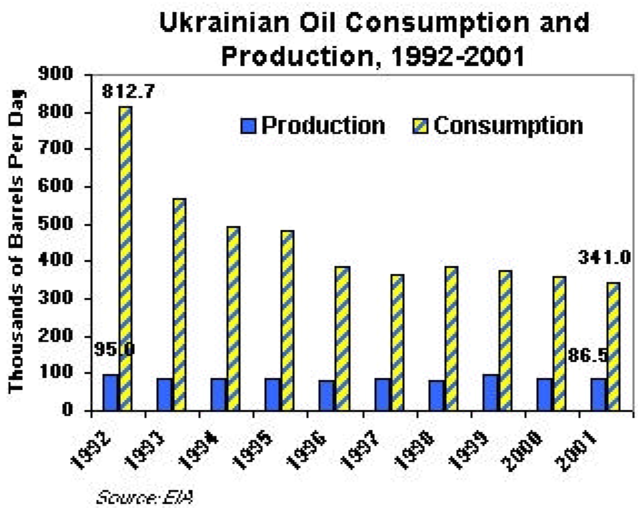
Under the leadership of Anatoly Kinakh, who was installed as Prime Minister by Ukrainian President Leonid Kuchma in May 2001, the Ukrainian government pushed through tax and land reforms in the fall of

2001, but the reform process slowed in the run-up to parliamentary elections on March 31, 2001. Energy sector reforms are still needed, although the Ukrainian government has taken a number of halting steps forward in 2002. Still, Ukraine's energy sector is riddled with debt, and its energy sector suffers from outdated equipment and a lack of funds for modernization. In addition, Ukraine's lack of domestic natural resources means that the country is heavily dependent on Russia for energy supplies, making good relations with its eastern neighbor a necessity.

OIL

Ukraine has 395 million barrels of proven oil reserves, the majority of which are located in the Dnieper-Donetsk basin in the eastern part of the country. Although the pace of exploration has picked up, particularly in Ukraine's sector of the Sea of Azov, Ukraine's oil production steadily declined in the years following the country's independence, from 95,000 bbl/d in 1992 to 82,000 bbl/d in 1998. With the rise in world oil prices in 1999, Ukraine's oil output shot up to 98,500 bbl/d before tailing off again to 88,300 bbl/d in 2000. In 2001, Ukraine produced 86,500 bbl/d of oil, and Naftohaz Ukrainy, the country's state-owned umbrella oil and gas company, reported that oil production is down 0.7% through the first quarter of 2002.

Ukraine's oil production volumes satisfy only about 25% of the country's domestic needs, making Ukraine highly dependent on foreign oil supplies. Although Ukraine's oil consumption has dried up dramatically since it began the transition to a market economy--decreasing 58%, from 813,000 bbl/d in 1992 to 341,000 bbl/d in 2001--the country's consumption still far outstrips its production capacity. Ukraine imports the majority of its oil from Russia, with lesser amounts coming from Kazakhstan.



Oil Transit

With a highly developed oil pipeline system, Ukraine plays an important role as a transit country for Russian oil exports to Europe. The southern branch of the 1.2-million-bbl/d Druzhba pipeline from Russia transits Ukraine en route to Slovakia, Hungary, and on to western Europe.

In addition, due to its geographic location and its oil pipeline system, Ukraine has an excellent opportunity to play a major role in bringing increased oil exports from Azerbaijan and Kazakhstan to European oil markets. Rather than seeking to import Caspian Sea region oil for domestic consumption, Ukraine is hoping to reap tariffs for Caspian oil transiting its territory as it heads westwards.

The chief components of Ukraine's strategy are the newly constructed Pivdenny oil terminal and the 560,000-bbl/d Odesa-Brody pipeline, which cost a combined $750 million to build. Ukraine is hoping to entice Caspian oil exporters shipping oil via the Black Sea to bypass the crowded Bosporus Straits, already a major chokepoint for tankers, and instead send their oil to European markets via Ukraine. However, Ukraine has not yet found any oil companies to fill the pipeline, and the country's attempts to make itself more attractive to investors--by stepping up oil sector privatization efforts or by proposing that an international consortium to manage the pipeline--have seen only limited results thus far.

Refining/Downstream

Ukraine has six refineries, with a combined crude oil refining capacity of just over 1.1 million bbl/d. However, with domestic demand at just over 30% of the country's refining capacity, Ukraine's refineries are operating significantly below capacity. Until recently, Ukraine's refineries did not even receive enough crude oil supplies to supply the country's petroleum product demand.

Ukraine has begun to achieve better results in securing sufficient crude oil supplies for its refineries by offering oil exporters in Russia and Kazakhstan a stake in the country's refineries. Ukraine's recent success in privatizing its refineries has allowed the country to secure additional oil supplies to meet domestic demand, as well as to attract funds for necessary renovation work and to boost utilization rates at its refineries.

Although still operating far below its 320,000-bbl/d potential, throughput has increased at the Lisichansk (LiNOS) refinery since Russian oil major Tyumen Oil (TNK) purchased 67% of the refinery in July 2000. Likewise, with Lukoil's purchase of a controlling share in the Odesa refinery, the Russian oil company agreed to pay $39.6 million of the refinery's debts and promised to supply 48,000 bbl/d of crude to the refinery annually until 2004. Ukraine boosted its imports of petroleum products by 8% in the first quarter of 2002 while crude oil supplies to refineries declined, owing to increased exports of refined products from Russia.

NATURAL GAS

Ukraine has natural gas reserves of 39.6 trillion cubic feet (Tcf). The country's natural gas production, which stood at 636 billion cubic feet (Bcf) in 2000, has remained relatively flat since 1995. In the first five months of 2002, Ukraine produced 272.8 Bcf of natural gas, a 1% year-on-year increase. Of this total, Naftohaz Ukrainy, the country's state-owned natural gas company, extracted 262.2 Bcf, accounting for 96% of the country's total natural gas output.

According to Chornomornaftohaz, a division of Naftohaz Ukrainy, three new natural gas deposits have been found on the southern Sea of Azov shelf in the last few years. As many as 13 natural gas and condensate and dry gas deposits with a combined 2.6 Tcf of possible reserves are on the shelf, but Ukraine's biggest natural gas deposits are already over 90% exhausted, and many of the country's recently developed natural gas deposits have been quite small. In June 2002, Chornomornaftohaz, which is developing four natural gas fields in the Black Sea, made a proposal to foreign investors to set up a $20 million joint venture to develop the Odesa natural gas field, which holds proven reserves of 389 Bcf.

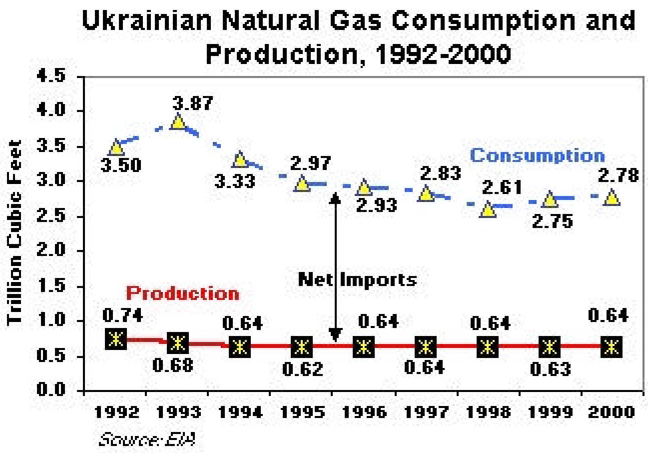
Still, Ukraine's consumption of natural gas far exceeds the country's natural gas production. In 2000, Ukraine consumed 2.78 Tcf of natural gas, leaving the country dependent on imports for nearly 80% of its consumption needs. Traditionally, Russia has been Ukraine's major source of natural gas supplies, with Ukraine receiving up to 1.1 Tcf per year of Russian natural gas as payment for transiting Russian natural gas to European markets.

Due to Ukraine's deficiency of indigenous natural gas, Ukraine has been forced to buy additional natural gas from Russia beyond what it receives as compensation for transit. In 2002, for the first time, Ukraine received natural gas from Russia as payment for transit services, but did not buy any additional supplies. Instead, Ukraine imported natural gas from Turkmenistan in order to supplement its own domestic production.

Ukraine-Russia Natural Gas Accords

Ukraine has run up a substantial debt to Russia for natural gas already supplied. In addition, Russia accused Ukraine of illegally siphoning natural gas destined for European consumers between 1998 and 2000, leading to heightened tensions between the two countries and prompting Russia to pursue plans to build a "Ukraine bypass" natural gas pipeline to Europe. Nearly 90% of Russia's natural gas exports travel to Europe via Ukraine.

With Ukraine's continued illegal siphoning of Russian natural gas in early 2000, Russia clamped down, demanding Ukraine pay its nearly $2 billion natural gas debt and halt unauthorized Russian natural gas consumption. In the fall of 2000, Russia offered to swap Ukraine's natural gas debt for equity in Ukraine's transit pipelines. However, Ukraine balked at the idea, and in May 2001 Ukraine reduced its dependence on Russian natural gas by contracting with Turkmenistan to receive 8.83 Tcf of natural gas between 2002 and 2006. The Turkmenistan deal will provide Ukraine with nearly 60% of its projected natural gas needs during that time period.



In December 2001, the sides broke the deadlock by coming to an initial agreement on Ukraine's debt for Russian natural gas supplies. Ukrainian and Russian negotiators agreed that Ukraine owes Russia $1.4 billion and that the sum will be paid over the next ten years, with no debt payments other than interest to be made in the first three years. In February 2002, the board of directors of Gazprom, the Russian natural gas monopoly, failed to address the issue of the proposed Ukrainian bypass pipeline, a move that analysts said signaled that the company did not have the financial wherewithal to undertake the project.

In June 2002, relations between Ukraine and Russia on the issue of natural gas transit warmed considerably as the sides agreed on a long-term transit agreement, as well as a preliminary deal to create an international consortium to manage and modernize Ukraine's natural gas transit pipeline system. The countries also signed a protocol to an earlier transit agreement, specifying that Ukraine would receive 918 Bcf of natural gas in 2003 as payment for transiting up to 4 Tcf of Russian natural gas to Europe, while Russia agreed to transit 1.06 Tcf of Turkmen natural gas for Ukrainian consumption. In addition, Ukraine agreed to allow Gazprom to operate Ukraine's underground natural gas storage facilities until 2013.

Future Natural Gas Imports

According to a study by the Ukrainian National Academy of Science, Ukraine's natural gas consumption could double by 2030, while the country's natural gas production may only increase 33% over that time period. As a result, Naftohaz Ukrainy is considering alternative sources of natural gas, including Iran and Norway. However, Mikhail Derkach, deputy chief executive officer of Naftohaz Ukrainy, has stated that it is not beneficial to buy Norwegian natural gas through Poland because of the high cost.

With construction of a natural gas pipeline from Iran to Armenia under development, Ukraine believes that an Iran-Armenia-Georgia-Crimea pipeline is possible, linking the pipeline from Georgia across the Black Sea to Ukraine's Crimean port of Feodosia. Iran is looking to increase its natural gas imports to Europe, and Ukraine is interested in maintaining its position as the major transit point for natural gas to Europe. However, the distance and substantial projected cost of such a pipeline has inhibited the implementation of this plan.

Thus, according to Derkach, Ukraine's most realistic plan is to increase natural gas imports from Turkmenistan. Ukraine currently imports natural gas from Turkmenistan for $42 per 1,000 cubic meters (35,300 cubic feet), which Ukraine pays for 50% in cash and 50% through participation in construction and industrial projects in Turkmenistan. The May 2001 deal is contingent on Ukraine remaining current in its natural gas payments to Turkmenistan, but Ukraine still owes Turkmenistan approximately $280 million for natural gas supplied between 1993 and 1994. The two countries have agreed on a schedule of current debt payments of $46 million for natural gas supplies in 2002.

COAL

Ukraine has 37.6 billion short tons in proven coal reserves, accounting for over 60% of the former Soviet Union's total coal reserves. Most of Ukraine's coal is mined in the Donetsk/Donbas basin in the eastern region of the country. In the mid-1990s, Ukraine's coal production dropped 43%, from 147.3 million short tons (Mmst) to 83.5 Mmst, before inching back up to 90.3 Mmst in 2000. Through the first five months of 2002, Ukraine produced 31.1 Mmst of coal, 0.4% less than in the same period of 2001.

The decline in Ukraine's coal production during the 1990s was caused in large part by the collapse of domestic demand--which, at 97.2 Mmst in 2000, still exceeds domestic supply--and the closing of heavy industry as Ukraine's economy contracted. Since Ukraine became independent in 1991, the country's coal sector has fallen into disarray: the industry, which counts 193 mines and employs around 450,000 people, suffers from labor strikes, hazardous working conditions, inefficiency and low productivity, corruption, consumer nonpayments, unpaid wages and huge debts, and outmoded equipment.

Ukraine's coal mining sector, which remains heavily subsidized by the Ukrainian government, has the world's highest death rate, mostly the result of obsolete equipment and low safety standards. On July 7, 2002, a fire at the Ukraina mine in eastern Ukraine killed 35 miners, the latest in a series of deadly accidents. Through the end of July 2002, over 150 miners had died in mining accidents in Ukraine this year, following nearly 300 deaths in 2001.

Meanwhile, the industry's debt level has risen to more than $2 billion--over 50% greater than the value of annual production and twice as much as its accounts receivable. Attempts to reform the sector began in 1996 but had little effect as the then-Ministry for Coal concentrated on barter deals, investments and subsidies while lobbying for a ban on coal imports. Although some reforms have begun to take root and wage arrears are beginning to be paid down, coal sector privatization has stalled, and a $300 million World Bank structural adjustment loan that was designed to close down more than 80 loss-making pits between 1997 and 2000 failed to close even half of those mines.

In September 2001, the Ukraine cabinet approved an $8.8 billion program to revive the country's coal sector over the next ten years. The program recognizes that the industry must switch to cash payments, improve mines, budgeting and asset management, seek investment sources, and reduce the mines' high level of debts before proceeding with further privatization. The program also aims to improve mine safety and work practices, as well as providing for a reduction in the number of coal mines to 157 in 2010. About two-thirds of Ukraine's 193 mines are unprofitable.

The World Bank has criticized Ukraine's coal mining strategy, saying that it contains no major mechanisms that would reduce barter and that the plan closes too few mines too slowly. However, in February 2002, Viktor Yanukovich, the head of administration of the Donetsk coal mining region, described the World Bank's suggested plan to close 50 to 60 mines in the next two or three years as "unacceptable" because it would result in a considerable decrease of jobs in the region. Although Ukraine's mines are expensive to operate, the Ukrainian government has been reluctant to reduce the number of mines due to the social costs of closing so many pits in an area with few other jobs.

Instead, the Ukrainian government plans to hike coal prices for the country's power generators by 10% before the end of 2002 and reduce state subsidies for the sector. Coal prices are to be increased to approximately $28.20 per metric ton, up from the current $25.60 per metric ton. The price hike should help the coal sector raise an additional $165 million after the government cut state subsidies. The Ukrainian government originally planned to spend $324 million to subsidize the coal sector in 2002, but due to a financial crunch can provide only $159 million, according to analysts.

ELECTRICITY
Ukraine's power sector, with 53.9 gigawatts (GW) of installed capacity, is plagued by debt and inefficiency. Thermal power plants (oil natural gas, coal) account for nearly 50% of the power produced in Ukraine, with nuclear power generating another 40%, and hydroelectric accounting for approximately 10%.

With four major thermal-fired power plants with 17 power generators, as well as four nuclear power plants with 13 reactors, Ukraine has enough generating capacity to produce twice its electricity needs. However, due to the inefficient and antiquated transmission and distribution network that the country inherited from the Soviet Union, a significant amount of power generated in Ukraine is wasted via line losses. According to Ukraine's Fuel and Energy Ministry, losses in electricity lines accounted for 21% of the total amount of electricity generated in 2000. Overall, Ukraine produced 163.6 billion kilowatt-hours (Bkwh) of electricity in 2000 against consumption of 151.7 Bkwh.

In February 2001, Russia and Ukraine struck a deal to reconnect their energy grids, providing Ukraine with a more stable electric frequency and allowing Russia to export its electricity to other countries--including Moldova, Romania, Bulgaria, and the Balkans--via Ukraine. Although the grids were supposed to be reconnected on March 1, 2001, the grids were not actually linked until August 2001.

Until recently, Ukraine's power sector also was beset by shortages of fuel for power generators. Since natural gas accounts for over 40% of the primary fuel consumption of Ukrainian thermal power plants, the country's reliance on Russian natural gas affects Ukraine's electricity sector as well. In mid-January 2001, Itera cut off natural gas supplies to four Ukrainian thermal electric power generators in order to force payment of debts for natural gas already supplied. With the recent agreements between Russia and Ukraine on natural gas supplies and transit, as well as a plan for Ukraine to pay its natural gas debts, the problem of natural gas cutoffs to power generators appears be resolved.

Non-payment by consumers is another obstacle hindering the further development of Ukraine's power sector. Although Ukraine's 27 regional energy distributors--called *oblenerhos*--legally are allowed to cut off non-paying customers to reduce losses and enforce payment discipline, in practice this often cannot be done without government permission. Nevertheless, owing to reforms in the sector and increased economic growth leading to a rise in per capita income, the percentage of power bills paid in cash has risen from below 10% in 1999 to approximately 86% as of July 2002.

With the cycle of debt in the state-run power generating and distribution sectors, Ukraine has been trying to privatize its regional energy distribution companies in order to relieve the government of the heavy debt burden. The country partially privatized the first seven *oblenerhos* in 1998, then sold stakes in another six of the regional distribution companies in April 2001.

However, in May 2001, President Leonid Kuchma ordered a temporary halt to the privatization of the remaining *oblenerhos*, pending a presidential review of the recent privatizations and additional reforms to the sector. In December 2001, Kuchma lifted the ban on the sale of the *oblenerhos*, and Ukraine is hoping to sell controlling stakes in 5 *oblenerhos* before the end of 2002, with the remainder to be sold in 2003.

Nuclear
Ukraine currently has four operating nuclear power plants. These power plants have a total capacity of 11.8 gigawatts, which accounts for approximately 22% of the country's total power-generating capacity. Ukraine's nuclear power plants produce 40% of the country's power output, despite frequent malfunctions and lengthy repairs and maintenance.

On December 15, 2000, Ukraine permanently shut down the 925-MW, Unit 3 at the Chornobyl power plant, disabling the last remaining working reactor at the ill-fated power plant. To replace the power generated by Chornobyl, which Ukrainian officials say produced approximately 5% of the country's total, Ukraine has resumed construction of two 1-GW reactors at the Khmelnitsky and Rivne power plants.

Construction of Khmelnitsky-2 and Rivne-4 was begun under the Soviet Union, and both were more than 80% finished when Ukraine received its independence and ran out of money to complete them. Ukraine is hoping to finish construction of both reactors with the help of financing from the European Bank for Reconstruction and Development (EBRD), but an EBRD loan for the project was put on hold in December 2001. Russia then offered Ukraine a $500 million loan to allow the country to finish construction of the two reactors, but most experts believe the reactors cannot be completed without additional financing. Ukraine is still negotiating with the EBRD to secure additional financing for the estimated $1.4 billion project.

ENVIRONMENT

The 1986 Chornobyl nuclear meltdown exposed the Soviet Union's negligent environmental record and triggered alarm across the globe. The world's worst nuclear accident created disastrous consequences for the environment, both in Ukraine and in neighboring countries. As a result, Soviet policies that encouraged industrial development at the expense of the environment came under harsh international criticism, and Chornobyl became a rallying cry for environmentalists around the world.

While Chornobyl remains the lasting symbol of environmental degradation in Ukraine, today air pollution in the major cities is a major problem. Yet, despite increased vehicle traffic, energy use is significantly lower now than in the mid-1990s. Although policies encouraging energy conservation and energy efficiency can take some of the credit, Ukraine's economic woes account for much of the reduction: as the economy contracted through the 1990s, industrial production and consumer demand dropped as well, resulting in lower carbon emissions. Ukraine's recent economic growth has led to increases in both carbon emissions and energy consumption.

In terms of energy consumption per dollar, Ukraine suffers from one of the highest levels of energy intensity in the world. The country's heavy dependence on coal makes it correspondingly high in carbon intensity, and the continued reliance on nuclear power--as well as a lack of financial resources or economic incentives--has stifled the country's use of renewable energies. In order to protect its environment better in the coming years, Ukraine will need to shift away from fossil fuels and break the link of economic output from environmental pollution.

COUNTRY OVERVIEW

President: Leonid Kuchma (since July 19, 1994)
Prime Minister: Anatoliy Kinakh (since May 29, 2001)
Independence: December 1, 1991 (from Soviet Union); National holiday: Independence Day, August 24, 1991
Population (7/01E): 48.7 million
Location: Eastern Europe, bordering the Black Sea between Poland and Russia
Size: 233,090 square miles, slightly smaller than Texas
Major Cities: Kiev (capital), Kharkiv, Donetsk, Dnipropetrovsk, Odesa, L'viv
Languages: Ukrainian (official), Russian, Romanian, Polish, Hungarian
Ethnic Groups: Ukrainian 73%, Russian 22%, Jewish 1%, other 4%
Religions: Ukrainian Orthodox - Moscow Patriarchate, Ukrainian Orthodox - Kiev Patriarchate, Ukrainian Autocephalous Orthodox, Ukrainian Catholic (Uniate), Protestant, Jewish

ECONOMIC OVERVIEW

Minister of Economy: Oleksandr Shlapak
Minister of Finance: Ihor Yushko

Currency: Hryvnia
Market Exchange Rate (8/5/02): US $1=5.22 hryvnia
Nominal Gross Domestic Product (GDP) (2001E): $37.2 billion; **(2002E):** $42.3 billion
Real GDP Growth Rate (2001E): 8.9%; **(2002E):** 5.6%
Inflation Rate (Change in Consumer Prices, Dec. 2000-Dec. 2001E): 6.1%; **(2002E):** 9.2%
Official Unemployment Rate (2001E): 3.8%; **(2002E):** 4.5%
Current Account Balance (2001E): $1.27 billion; **(2002E):** $1.12 billion
Major Trading Partners: Russia, EU, U.S., Turkey
Merchandise Exports (2001E): $17.0 billion; **(2002E):** $18.1 billion
Merchandise Imports (2001E): $16.8 billion; **(2002E):** $18.2 billion
Merchandise Trade Balance (2001E): $200 million; **(2002E):** -$123 million
Major Exports: ferrous and nonferrous metals, fuel and petroleum products, machinery and transport equipment, food products
Major Imports: energy, machinery and parts, transportation equipment, chemicals
External Debt (12/01E): $12.0 billion

ENERGY OVERVIEW
First Deputy Prime Minister (for Energy Issues): Oleh Dubyna
Minister of Fuel & Energy: Vitaliy Hayduk
President, Naftohaz Ukrainy (National Oil and Gas Company): Yuri Boiko
Proven Oil Reserves (1/1/02E): 395 million barrels
Oil Production (2001E): 86,500 barrels per day (bbl/d); **(2002E):** 80,000 bbl/d
Oil Consumption (2001E): 341,000 bbl/d
Net Oil Imports (2001E): 254,500 bbl/d
Crude Refining Capacity (1/1/02E): 1.15 million bbl/d
Natural Gas Reserves (1/1/02E): 39.6 trillion cubic feet (Tcf)
Natural Gas Production (2000E): 636 Bcf
Natural Gas Consumption (2000E): 2.78 Tcf
Net Natural Gas Imports (2000E): 2.14 Tcf
Coal Reserves (1/1/01E): 37.6 billion short tons
Coal Production (2000E): 90.3 million short tons (Mmst)
Coal Consumption (2000E): 97.2 Mmst
Electricity Generation Capacity (2000E): 53.9 gigawatts (GW)
Electricity Production (2000E): 163.6 billion kilowatt-hours (Bkwh)
Electricity Consumption (2000E): 151.7 Bkwh

ENVIRONMENTAL OVERVIEW
Minister of Ecology and Natural Resources: Serhiy Kurykin
Total Energy Consumption (2000E): 6.46 quadrillion Btu* (1.6% of world total energy consumption)
Energy-Related Carbon Emissions (2000E): 104.46 million metric tons of carbon (1.6% of world total carbon emissions)
Per Capita Energy Consumption (2000E): 130.3 million Btu (vs. U.S. value of 351.0 million Btu)
Per Capita Carbon Emissions (2000E): 2.1 metric tons of carbon (vs. U.S. value of 5.6 metric tons of carbon)
Energy Intensity (2000E): 193,312 Btu/$1995 (vs U.S. value of 10,918 Btu/$1995)**
Carbon Intensity (2000E): 3.13 metric tons of carbon/thousand $1995 (vs U.S. value of 0.17 metric tons/thousand $1995)**
Sectoral Share of Energy Consumption (1998E): Industrial (61.6%), Residential (15.6%), Transportation (14.1%), Commercial (8.6%)
Sectoral Share of Carbon Emissions (1998E): Industrial (64.6%), Residential (16.2%), Transportation (11.8%), Commercial (7.4%)

Fuel Share of Energy Consumption (2000E): Natural Gas (45.0%), Coal (29.7%), Nuclear (12.1%), Oil (11.5%)
Fuel Share of Carbon Emissions (2000E): Coal (46.3%), Natural Gas (40.1%), Oil (13.5%)
Renewable Energy Consumption (1998E): 175 trillion Btu* (36% increase from 1997)
Number of People per Motor Vehicle (1998): 10.6 (vs. U.S. value of 1.3)
Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified May 13th, 1997). Signatory to the Kyoto Protocol (signed March 15th, 1999, not yet ratified)
Major Environmental Issues: Inadequate supplies of potable water; air and water pollution; deforestation; radiation contamination in the northeast from 1986 accident at Chornobyl Nuclear Power Plant.
Major International Environmental Agreements: A party to Conventions on Air Pollution, Air Pollution-Nitrogen Oxides, Air Pollution-Sulphur 85, Antarctic Treaty, Biodiversity, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Wetlands. *Has signed, but not ratified*: Air Pollution-Persistent Organic Pollutants, Air Pollution-Sulphur 94, Air Pollution-Volatile Organic Compounds, Antarctic-Environmental Protocol.

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar and wind electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP based on EIA International Energy Annual 2000

ENERGY INDUSTRY
Organization: Naftohaz Ukrainy (state-owned oil and natural umbrella company with many subsidiaries, including UkrNafta (oil productionl), UkrTransNafta (oil transit), UkrTransHaz (natural gas transit), etc.); Enerhoatom (state-owned nuclear energy company).
Major Oil/Gas Fields: Dnieper-Donetsk Basin in eastern Ukraine, Precarpathian Basin in western Ukraine, Crimea, Arkhangelskoye (NW Crimea) Field, and the Sea of Azov
Major Oil Ports: Odesa, Sevastopol, Feodosia, Pivdenny
Oil Export Pipelines Crossing Ukraine: Friendship (Druzhba) (1.2 million bbl/d), Odesa-Brody (180,000 bbl/d, rising to 500,000 bbl/d), Eastern Products (30,000 bbl/d)
Major Oil Refineries (1/1/01 crude processing capacity): Kremenchuk (361,000 bbl/d), Lisichansk (320,000 bbl/d), Kherson (236,000 bbl/d), Odesa (78,000 bbl/d), Drogobich (78,000 bbl/d), Nadvornaja (74,000 bbl/d)
Foreign Oil and Gas Company Involvement: CanArgo Energy, Karpatsky Petroleum, Epic Energy, EuroGas, Gazprom, JKX, LVR, Momentum Enterprises, Odesa Petroleum
Natural Gas Export Pipelines Crossing Ukraine (Capacity): Northern Lights (0.8 Tcf), Progress (1 Tcf), Shebelinka (0.7 Tcf), Soyuz (1 Tcf), Urengoy (1 Tcf), West Ukraine (0.15 Tcf)
Major Coal Fields: Donets/Donbass Basin, Lviv-Volhynian (West Ukraine) Basin, Dnieper Basin (lignite)
Nuclear Power Plants (Capacity): Zaporozhia (6,000 MW), South Ukraine (3,000 MW), Rivne (1,880 MW), Khmelnitsky (1,000 MW)

Sources for this report include: BBC Monitoring International Reports, CIA World Factbook, Current Digest of the Post-Soviet Press, DRI/WEFA Eurasian Economic Outlook, DRI/PlanEcon, The Economist, The Financial Times, FSU Energy, FSU Oil and Gas Monitor, Interfax News Agency, ITAR-TASS News Agency, Oil and Gas Journal, Petroleum Economist, Petroleum Report, Platt's International Coal Report, Platt's Oilgram News, Polish News Bulletin, PR Newswire, Project Finance, Radio Free Europe/Radio Liberty, Reuters, Ukraine Business Report, U.S. Department of Energy, U.S. Energy Information

Administration, U.S. Department of State, Warsaw Business Journal, and World Markets Energy.

LINKS

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Contact: Lowell Feld
Lowell.Feld@eia.doe.gov
Phone: (202) 586-9502
Fax: (202) 586-9753

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