UKRAINE, RUSSIA, AND THE CENTRAL ASIAN STATES: COOPERATION PROBLEMS IN THE GAS SECTOR

David PREIGER

D.Sc. (Econ.), professor,
head of the Department of Transportation Communication Development Problems,
National Institute of International Security Problems
(Kiev, Ukraine)

Irina MALIARCHUK

Ph.D. (Econ.), state expert,
Department of Transportation Communication Development Problems,
National Institute of International Security Problems
(Kiev, Ukraine)

Taisia GRINKEVICH

Chief consultant,
Department of Transportation Communication Development Problems,
National Institute of International Security Problems
(Kiev, Ukraine)

Ukraine is a country that does not have enough oil and gas resources, its raw hydrocarbon consumption level is much higher than its production level, and the country must look for ways to compensate for this difference in a situation where it clearly does not have the funds to do so. On the bright side, the republic is in an advantageous geographic location between the oil- and natural gas-rich Russian Federation (this country links it by transit with Kazakhstan, and through it with Uzbekistan and Turkmenistan) and the large consumers of these resources in the West—the countries of East, Central, and West Europe, the Balkan states, and even Turkey. Together with the significant extractable resources of oil and gas available in Ukraine as early as the middle of the last century, its position was conducive to building large oil and gas pipelines for delivering Ukrainian raw material to other republics of the U.S.S.R. (Belarus, Lithuania, Latvia, Estonia, and Russia) at the end of the 1940s, and then (after the most accessible resources were extracted) they were used to export the Russian Federation's hydrocarbons in the western and southwestern directions.

After the collapse of the U.S.S.R., suppliers began to pay for transportation (transit) services either in money or in resources Ukraine does not have. For example, Moscow currently gives Kiev approximately 25 billion cubic meters of gas a year by way of transit payment, which constitutes more than a third of Ukraine's yearly consumption. Nevertheless, our republic has still untapped transit potential, which is sending it in search of new countries, which will pump gas through it, or at least sellers of gas, which (taking into account its own production and the payment in kind exacted from Gazprom) it clearly does not have enough of. But, without common borders with the Central Asian countries, Ukraine and its potential suppliers of blue fuel have to come to terms with Russia, which is now a transit state. In this respect, it is worth taking a more in-depth look at the situation developing around Ukraine's gas transportation system, the efficient use of which should not only promote the development of its economy, but also realize Kiev's important geopolitical and geostrategic interests.

At present, the republic's gas transportation system (GTS) occupies second place in Europe after the Russian Federation. At the beginning of 2002, the total length of the system exceeded 37,100 km, 23,000 of which consisted of main pipelines. By this time, it also included 72 compressor stations (CS), which comprised 112 compressor shops with a total capacity of 5,600 megawatts, 13 underground storage reservoirs (USR) and 1,332 gas distribution stations (GDS), 229,000 km of distribution network, and 14,800 network stations. The system's throughput capacity at the entrance was determined at 290 billion cubic meters a year and at the exit at 175 billion cubic meters. The current capacities make it possible to transport up to 140 billion cubic meters of gas a year in the westerly direction (today this means 18 European countries). The USRs (which have a total planned storage volume of 34.5 billion cubic meters) are located primarily in the west, forming a kind of gas accumulator and fluctuation damper of its inflow, which ensures the regular and guaranteed supply of blue fuel to consumers. The GTS is used to transport up to 75-80 billion cubic meters of gas to Ukraine's domestic consumers, including approximately 7 billion cubic meters for the operational needs of the network itself.

The cost of the entire system (taking into account foreign analogues) fluctuates between 22 billion and 28.7 billion dollars (depending on the calculation method used and the goals it serves). It is capable of bringing in up to 2.5 billion dollars of revenue a year by pumping Russian gas to European countries and approximately 1.3 billion hrivnas for transportation services rendered to Ukrainian consumers. But the main purpose of the system is to ensure the increasing deliveries from the east, as is required by the economy of the actively developing West.

For example, at present the EU countries are covering 60% of their requirements by means of their own production (on the whole). These states are buying gas from Russia—40.7% of foreign deliveries, Algeria—23.3%, and Norway—20.1%. According to forecasts, by 2020 the dependence of the European Union countries on these deliveries will increase to 67%, and taking into account the EU's extension to the East to 73%. It is presumed that the demand for gas will grow the fastest in Germany, since it does not want to use energy from nuclear power plants (Russia's share in its gas balance already amounts to 37%). In so doing, Algeria and Norway's prospects are limited, so in addition to the Russian Federation, the most important suppliers will obviously be the Central Asian republics: Turkmenistan, Uzbekistan, and Kazakhstan. They have access to the Russian gas transportation system and the opportunity to integrate into the Ukrainian GTS.

In this respect, the most important artery could be the Central Asia-Center pipeline system, which has the capacity to send up to 60 billion cubic meters of gas a year in the northwest direction.

But increasing the dependence of the EU countries on one supplier (the Central Asian countries do not have their own transportation arteries that do not pass through the Russian Federation) is forcing them (in order to ensure their national energy security) to look for alternative suppliers that transport gas along other routes. For example, in correspondence with the decisions made at the conference in Barcelona (March 2002), beginning in 2004, deliveries from the Russian Federation under long-term contracts are to be cut back, and beginning in 2005, the European gas market is to be liberalized, that is, this will give other producers access to it. In this respect Russia is expected to create an international organization along the lines of a gas OPEC. This idea is supported by several Central Asian stations, Algeria, and Iran. In addi-

tion to the North African countries, Iran and even Iraq are being considered by way of alternatives in the EU. These two countries have quite large supplies of natural gas. This may place the Ukrainian GTS in demand, the throughput capacity of which, as we have already noted, is not being used to its full capacity at present (approximately by 60-70%, the reserve capacity in the western direction is estimated at 50 billion cubic meters of gas a year, and the USR capacity is being used at 55-60%) and could be increased. It is also obvious that Ukraine will have to compete with other transit states, Belarus, Poland, Turkey, and the Balkan countries, through which gas can also be pumped to Europe. Losing this fight could have a grievous effect on the Ukrainian GTS and gradually make it redundant with respect to delivering gas to Europe.

For the time being, however, Ukraine is raising the throughput capacity of its GTS. It is implementing programs to modernize and extend the network, which should make it possible to pump up to an additional 40 billion cubic meters of gas per year. The matter concerns building compressor stations on the linear part of the Torzhok-Dolina gas pipeline that has already been built, and creating conditions for fully implementing the planned capacities of the Ivantsevichi-Dolina and Khust-Satu-Mare gas pipelines. According to the data of the Neftegaz Ukrainy Company, in the 1990s, 5,000 km of main gas pipelines and branches were built and went into operation, as well as nine compressor shops with a total capacity of more than 400 megawatts. Later the Dolinskaia and Uzhgorodskaia reconstructed compressor stations went into operation, the Novopskov-Aksai-Mozdok, Dashava-Minsk-Shebelinka-Dnepropetrovsk-Odessa, Dolina-Uzhgorod-Gosgranitsa, and Ananiev-Tiraspol-Izmail main gas pipelines were modernized and reconstructed. What is more, other measures envisaged by the program for the reconstruction of compressor stations and the program for the reconstruction of the linear part of the gas transportation system drawn up under the national program called "Ukrainian Oil and Gas until 2010" have been carried out. All of this makes it possible to raise the efficiency of the work of the compressor stations, increase the pumping and selection volume of blue fuel in underground storage reservoirs located in the west of the republic, reduce the expenditure of fuel gas for technological needs, reduce the dumping of toxic wastes into the atmosphere, and bring these parameters into harmony with the European indices, which is extremely important on the eve of forming an International Consortium for Managing and Developing the Ukraine's Gas Transportation System (IGTC).

In 2002, 121.4 billion cubic meters of gas were transited via the Ukrainian GTS, including to 106.1 billion cubic meters to European countries (apart from the CIS) (see the table).

These data show that Ukraine's system of main gas pipelines is an important link in the export of Russian natural gas to Europe (currently up to 90%). This amount could be increased in the future since, as we have noted, Europe's gas demands are on the rise. Russian sources present the estimates of analysts from the U.S. Department of Energy, who claim that in 2010, the European economy will need a total of 640 billion cubic meters of gas, and according to other data, 610 billion cubic meters, compared with the current 450 billion cubic meters (according to some estimates, by 2002, Europe had consumed 516.6 billion cubic meters). In so doing, experts believe that Western Europe will be importing 205-220 billion cubic meters by 2010 and 270-300 billion cubic meters by 2020, while the Central European countries will be importing 84-94 and 114-130 billion cubic meters, respectively. Nevertheless, it is expected that in the next 7-10 years, production will decrease at the fields currently operating in the North Sea. According to the estimates of experts, Norway and Great Britain will be able (together) to ensure a maximum of 28% of the continent's needs (in 2002, they delivered 34%). The total gas production in Europe and percentage of the traditional exporters—Russia and Algeria—will amount to only 534 billion cubic meters (87.5% of the predicted demand). So Europe will need additional deliveries from other foreign sources—approximately 76-106 billion cubic meters of gas.[1] Russia and the Central Asian countries, including the Caspian states, will account for a significant amount of future import. Analysts from the Center for Global Energy Studies believe that 16% of the region's entire natural gas resources are concentrated in the Kazakhstan sector of the Caspian Sea, Uzbekistan also

[1] See: R. Ter-Sarkissov, S. Roginskiy, "Gazovyy rynok Yevropy 2010," *Neftegazovaia vertikal,* No. 6, 2003.

Table

Amount of Gas Pumped Via the Ukrainian GTS in 2000-2002 (*bill. cubic meters)*

Index	2000	2001	2002
Transit	**123.6**	**124.4**	**121.4**
To European countries	**112.3**	**105.3**	**106.1**
To CIS countries	**11.3**	**19.1**	**15.3**
To Ukrainian consumers	**65.7**	**63.4**	**62.2**
Import deliveries to Ukraine, total	**60.7**	**60.9**	**56.5**
From Gazprom	**27.9**	**26**	**25.3**
From Itera (Turkmengaz + Itera)	**2.8**	**34.9**	**31.2**
Technological outlays	**7.7**	**7**	**7.5**
Own production			

Source: [http://www.Energo.Net.Ua/novost/php?id=372].

has this amount of resources, Turkmenistan accounts for another 25%, Russia for 27%, Azerbaijan for 13%, and Iran for 3%.[2]

Russia owns 42% of the total world resources and 34% of the explored reserves of natural gas. As early as 2000, it exported 208 billion cubic meters, now this amount is growing. In 2003, according to preliminary data, Moscow pumped 127.8 billion cubic meters of gas through Ukraine alone, and in the future, until 2013 (according to a long-term agreement between our countries), this amount will increase. As early as 2005, this amount will reach 143.8 billion cubic meters, and 36.7 billion cubic meters will go to the Balkan states. As for 2004, Russia's Gazprom will deliver 127.8 billion cubic meters of gas via Neftegaz Ukrainy's networks, 110 billion of which will go to European countries, and 17.8 billion to the CIS republics, including the Russian Federation. In accordance with its transit conditions, Kiev has the right to export 6 billion cubic meters of gas, 5 billion of which must be bought by Russia's Gazexport directly on the Ukrainian and Slovakian border.[3]

Neftegaz Ukrainy and Gazprom have also come to terms on payment conditions for Ukraine's transit services rendered to the Russian Federation: transit payment for 100 km is $1.09375 for 1,000 cubic meters. To meet this payment, 24 billion cubic meters of gas will be delivered at $50 per 1,000 cubic meters, and the rest will be paid in money. The agreement envisages conditions for Ukraine to reduce its import of Central Asian gas (36 billion cubic meters is planned), and sets forth compensation of it by the Russian side—$50 per 1,000 cubic meters.

According to preliminary data, in 2003, Gazprom alone produced 540 billion cubic meters of gas (20 billion cubic meters more than in 2002 and 28 billion more than in 2001). What is more, if we take other Russian gas-producing companies as well, then Russia could produce as much as 600 billion cubic meters.[4]

[2] See: [http://www.ngv.ru/magazin/fullview.hsql?id=1188].
[3] See: *Gazprom Will Buy Gas from Ukraine* [http://www.riatec.ru/].
[4] See: *Zerkalo nedeli*, No. 37, 27 September-3 October, 2003.

It should be noted that Russia's active use of our country's gas transportation system for delivering its gas to Europe is ensured by the corresponding level of development of Russia's own integrated gas supply system (IGS), which is up to 150,000 km long. (In the Russian Federation, in contrast to other countries, the main gas pipelines are an integrated system both for exporting blue fuel and delivering it to domestic consumers, which includes 3,633 gas distribution stations of the local system, 253 compressor stations with a total capacity of 42.6 million kilowatts, and a productivity of more than 600 billion cubic meters a year, that is, approximately 1.75 billion cubic meters a day.)

World renowned Gazprom essentially holds a monopoly on the Russian gas market. Its long-term export contracts envisage delivering 2.3 trillion cubic meters of gas, whereby up to 195.9 billion cubic meters of Russian gas should be sent to Europe by 2010 (the amount was 156.5 billion cubic meters in 2002, which was more than a quarter of the consumption volume). In so doing, Russia, by retaining its leading position in this sphere, will be able to increase export by means of its own resources, by implementing several production-raising projects, and by re-exporting the gas it purchased in Central Asian countries. But the last alternative harbors several potential threats for Moscow with respect to performing its long-term obligations on gas deliveries. And these threats will grow as the percentage of gas of the Central Asian states increases in Russia's total export.

The technical state of Russia's IGS is also a cause for worry, since most of its main pipe system was built and put into operation in the 1970s-1980s and the average age of the pipelines is 23 years (only 30% have been in operation for up to 15 years, 37% for approximately 20 years, and 16% for more than 30 years). So they must be renovated, and by 2020 almost 27,000 km of new pipelines must be built, for which significant investments are required (it is believed that 1 km will cost approximately 1 million dollars). Among the new construction plans, the North European Gas Pipeline (NEG) is becoming increasingly popular and is gaining support from the European Union. This pipeline is to pass through Russia, along the bed of the Finnish Gulf and the Baltic Sea to the shores of Germany and have a throughput capacity (according to different estimates) of between 19.7 billion to 30-45 billion cubic meters a year. Other popular projects are reconstruction (second phase) of the Ananiev-Tiraspol-Izmail-Rumania-Bulgaria-Turkey pipeline (the Gaztranzit project), the Kobrin-Velke Kapusany gas pipeline-branch with a throughput capacity of up to 30 billion cubic meters (bypassing Ukraine), the second branch of the Yamal-Europe main pipeline (via Poland to Germany), which also has a capacity of up to 30 billion cubic meters, and so on. Implementation of these projects is only possible if new, primarily difficult-to-reach fields go into operation. According to experts, the Gazprom Company alone will need to invest 32-35 billion dollars in work to increase production, as well as create and technically enhance the domestic gas transportation infrastructure before 2005, which is much more than its investment potential. For example, in 2000, it only had 2.7 billion dollars to spend on this, and its total credit debts on future (right up until 2020) gas deliveries are more than 14 billion dollars.

The shortage of finances and drop in production at the main fields (with insufficient exploration of new ones) could make it necessary for Russia to reconsider its priorities in developing its own production and transportation sectors with a view to routes that pass primarily through its own territory, thus saving on transit service fees to other states, primarily Ukraine. It goes without saying that official Kiev should pay attention to the current situation and take measures to bring the country up to the rank of independent player on the European gas market. Active negotiations should be held both with potential gas suppliers in the republic's GTS and with its consumers in Europe, primarily with EU states. This may be assisted primarily by the fact that the Ukrainian GTS is in close cooperation (in addition with the Russian) with the systems of its neighboring European countries: Poland, Belarus, Rumania, Moldova, Hungary, and Slovakia, and via them is integrated into the European gas transportation networks. These advantages can be used in delivering Russian, Central Asian, and possibly also Caspian gas to Europe, as well as be taken into account when drawing up documents relating to the formation and functioning of a future international gas consortium.

In this context, it is worth taking a closer look at the state and prospects for cooperation between Ukraine and the Central Asian republics, keeping in mind that our country does not have any common borders with them, and relations in this area can only be established via third countries.

Turkmenistan is one of the largest Central Asian producers of natural gas, which for several objective reasons is in no rush to gain independent access to the European market, but is selling blue fuel to Ukraine and Russia (with the right to re-export). For example, in accordance with a bilateral agreement with Moscow of 10 April, 2003 (the so-called "gas contract" in effect until 2028, which Kiev is being asked to join), Russian gas purchases will increase. By 2007, they will amount to approximately 50 billion cubic meters (the buyer is Gazprom), by 2010, to 80 billion cubic meters, and for the entire period they will amount to approximately 2 trillion cubic meters (in the first three years at $44 per 1,000 cubic meters). Russia will use some of this gas to supply its own consumers, and it will export the rest (under replacement conditions). It can be presumed that Gazprom's purchase of such a large amount of gas in Turkmenistan, as well as under other contracts with Central Asian and Caspian states will make it imperative for this company to look for ways to increase the throughput capacities of its IGS in the westerly (primarily through Ukraine) direction. This directly corresponds with the need to realize national interests within the international gas consortium to be created with Kiev. The proposals made by Russia and essentially coordinated with the Ukrainian side to build a new branch of the main Novopskov-Uzhgorod pipeline with a throughput capacity of up to 28 billion cubic meters a year (estimated cost 2-2.5 billion dollars) should be reviewed in precisely this context.

As already noted, the potential of the Ukrainian GTS for transiting gas in the westerly direction is not being used to its fullest extent. So there are other motives for this new construction, one of which is obviously Moscow's desire to become co-owner of the property of part of our republic's system by the time the IGTC is ultimately formed. It is possible that in this situation Kiev did not have any reason to ignore Russia's offers, since Ukraine has long been making use of Gazprom's transit services to purchase gas in Turkmenistan and intends to purchase it in other Central Asian states and then maybe in Iran. It is likely that Ashkhabad's interests have also been taken into account in this decision.

As for Kiev's interests, they have been set forth in a contract on gas delivery to Ukraine in 2002-2006 (250 billion cubic meters) signed in May 2001 with Turkmenistan.[5] Implementing the contract will make it possible for Ashkhabad to resolve several problems: bringing hard currency into its budget, using gas deliveries to carry out important construction work, which it does not have the money for today, and forming the image of a reliable supplier of energy resources in the European consumer. This contract is also advantageous to Ukraine, since because it does not have enough hard currency to purchase all the gas it needs, it will be able to compensate part of these deliveries by building or modernizing industrial and transportation facilities, municipal housing projects, and infrastructure of the fuel and energy complex in Turkmenistan, and so on. For example, an agreement between the Neftegaz Ukrainy and Turkmenneftegaz companies envisages the possibility of selling 31.5 billion cubic meters of gas to Kiev in 2004, and 4.5 billion cubic meters should be sent by way of Ashkhabad's payment for the work carried out by Ukrainian enterprises at investment facilities in Turkmenistan. Moscow can also see some benefit for itself in these agreements, therefore it signed a special trilateral agreement in September 2003 for transporting Turkmen gas to Ukraine.

Turkmenistan accounts for approximately 2% of the explored world reserves of natural gas (2.86 trillion cubic meters). The potential of the Turkmen shelf in the Caspian is estimated, according to the latest data, at another 11 trillion cubic meters, although the total forecasts vary between 15.53 and 23 trillion cubic meters. As of today, 144 fields have been opened in the republic and future areas amount to approximately 80% of its territory. In 2001, 47.9 billion cubic meters were produced in the country, 37.2 billion cubic meters of which were sent to Russia, Ukraine, and Iran. The percentage of natural gas in Turkmenistan's export structure is 56%. In so doing, approximately 11 billion cubic meters a year are used for its own consumption.

According to preliminary data confirmed by the Turkmen leadership, the republic produced approximately 80 billion cubic meters of gas in 2003 (according to other sources[6]—67.6 billion cubic meters),

[5] See: *Governmental Courier,* 15 April, 2003 (in Ukrainian).

[6] See: I. Tomberg, "Energy Policy in the Countries of Central Asia and the Caucasus," *Central Asia and the Caucasus*, No. 4 (22), 2003, p. 75.

and by 2010, this index could increase to 120 billion cubic meters. In compliance with the prospective plans, 75 billion cubic meters are to be exported by 2005, and 100 billion cubic meters a year by 2010. But the country's potential in this area is severely restricted by the throughput capacity of the pipelines.[7] Therefore, it must urgently finding routes for delivering its natural gas to the foreign markets (provided all the contracts signed in the CIS are implemented). In this respect, we should remember that at present, Turkmenistan's gas transportation system includes two main gas pipelines which are at a significant distance from each other. The northern route ensures pumping from the eastern gas-producing regions to the Central Asia-Center pipeline system via Uzbekistan and Kazakhstan to Russia, and on to Ukraine (with possible delivery to Europe). And the Korpeje-Kurtkui pipeline runs in the southern direction, which is currently used to export gas from the western gas-producing regions to Iran, and also to pump gas to Turkey and on to Europe. This route will also make it possible to gain access to the Asian market.

As Russian experts claim, the Turkmen section of the Central Asia-Center pipeline requires significant investments, since its original throughput capacity of 50 billion cubic meters a year dropped to 35-36 billion cubic meters, and wear and tear on the basic equipment amounts to 72-87%. There is also a similar situation in other sections of this system, which pass through Kazakhstan (836 km in length) and Uzbekistan. It is likely that Gazprom is primarily interested in modernizing the main gas pipeline, which, according to Russian sources, is considering allotting up to 2 billion dollars for this purpose, 600 million dollars of which are to go to the Turkmen section alone.[8] It is obvious that these funds can also be obtained from the difference between the purchase price of gas in the republics of Central Asia and its sale in the West. Therefore, the sellers of blue fuel, at least Turkmenistan, are not rendering Gazprom active support at present. Admittedly, Turkmenistan and Uzbekistan have still not found a common approach to this question since they are competitors to a certain extent.

Ashkhabad has been trying for many years now to resolve the problem of exporting gas in the southern direction, where at least two alternatives are being considered: the Trans-Caspian (Caspian) and Trans-Afghan gas pipeline projects. Pakistan and Afghanistan are also interested in the latter. At the first stage (March 1995), Turkmenistan and Pakistan signed a bilateral agreement on the construction of a gas pipeline, which was later supported by Afghanistan and Uzbekistan, which later hoped to export its own gas via this pipeline. The possibility is being considered of extending the route to India. The U.S. is also supporting the project. What is more, in October 1997, the American Unocal Company (California) founded a corresponding consortium, the Central Asia Gas Pipeline.

Reference: *the consortium is to include the Turkmenistan government, 17%, Unocal Central Asia Ltd., 36.5% (at present this share is free), the Delta Gas Pipeline Company Ltd. (Saudi Arabia), 15%, Cieco Transasia Gas Ltd./Itochu Corporation/Indonesia Petroleum Ltd./ Inpex Company, 13%, Hyundai Engineering and Construction Company Ltd. (South Korea), 5%, and the Crescent Group (Pakistan), 3.5%. According to analysts, Turkmenistan has left another 10% available to new investors, primarily the Russian Federation. The total length of the route—from the Turkmen gas field Dauletabad-Donmez via Afghan Kandahar to the Pakistani town of Multan, where the pipeline is to join up with the local gas transportation system, and on to the port of Gwadar on the coast of the Arabian Sea—is more than 1,500 km. The throughput capacity is 15-25 billion cubic meters a year. The estimated cost is 2 billion dollars (not counting the section to India, estimated at 600 million dollars).*

Admittedly, in August 1998, the Unocal Company halted work on the project and left Turkmenistan without resolving the question of financing the gas pipeline. Today the project is being revived, but the route of the pipeline has still not been determined, guarantees for its financing have not been

[7] See: Ye. Ogibenin, P. Grafov, "Zavetnaia mechta Turkmenbashi," *Mirovaia ekonomika i politika,* No. 8, 29 October, 2002.

[8] [http://www.gundogar.org/?topic_id=12&id=146].

ensured, and questions of political stability in the region have not fully been resolved. The new trilateral agreement signed in December 2002 by Turkmenistan, Afghanistan, and Pakistan nevertheless inspires hope, which Ukraine was also asked to join (but no particular response to this offer was forthcoming).

As for the Trans-Caspian Gas Pipeline (TCG), which envisages the possibility of several Caspian states exporting 30-32 billion cubic meters of gas a year via a route that passes from the Turkmen gas field of Shatlyk through the Caspian Sea, Azerbaijan, and Georgia to Turkey, a corresponding agreement supported by the U.S. (due to Washington's desire to weaken Moscow's influence in the region) was signed in 1999 by the presidents of Turkmenistan, Turkey, Azerbaijan, and Georgia. What is more, Ashkhabad and the Turkish Botas Company signed an agreement on deliveries (beginning in 2002) of 16 billion cubic meters of gas to Turkey each. (Implementation of the TCG will have a significant effect on Russia's position in Turkey, where the Blue Stream gas pipeline goes, which is still not operating under the projected conditions, as well as on Iran's ability to increase gas deliveries both to Turkish consumers and by transit to Europe.) Significant environmental problems may also arise. For example, in a joint statement between Russia and Iran of 12 March, 2001, it is noted that laying any pipelines along the bed of the Caspian Sea will be an "environmental threat due to the extremely active geodynamics" in this area. Taking this into account, it can be presumed that until the status of the Caspian Sea is determined, it is inexpedient to talk about practical implementation of the TCG. This is probably why Turkmenistan is currently working on other ambitious projects for exporting natural gas, including to Armenia via Iran bypassing the Caspian, as well as liquefied natural gas, the use of which is growing rapidly in world practice and, according to some data,[9] as early as 2001 amounted to 30% (147 billion cubic meters) of the world trade volume of this type of fuel.

Taking into account Ukraine's economic interests in this region, Kiev should step up its cooperation with Ashkhabad on developing its gas fields on the right-hand bank of the Amu Darya River and its participation in the negotiation process among Turkmenistan, Iran, Afghanistan, and Pakistan (in particular, it should submit a proposal on the formation of a new integrated gas delivery route from the Central Asian countries to the European markets). This would not only increase the energy transit potential of our republic, but also ensure reinforcement of its own and Europe's energy security. Passivity may lead to Ukraine's irrevocable ousting from the market of transportation services in the region, and its replacement by other players headed by the U.S., which should support its own companies working in the Caspian, or by Azerbaijan, which is concerned about transporting its natural gas from the Shakh Deniz field to Erzurum (Turkey).

Reference: *at present Azerbaijan is buying natural gas in Russia (2,119 billion cubic meters during the first half of 2003), which is pumped via the Mozdok-Kazi-Magomed route. This is done to economize on oil, which Azerbaijan delivers under its obligations to Russia via the Baku-Novorossiisk oil pipeline. As for the Shakh Deniz field, in the summer of 2003, the French petroleum company Technip-Coflexip SA (TCR) received a contract (300 million dollars) for its development. The company will cooperate with BP PLC, which owns 25.5% of the shares, Statoil ASA (25.5%), the State Oil Company of the Republic of Azerbaijan, LukAgip, Total SA (all with 10% each), and TPAO (9%).*

One of Ukraine's important partners may be Kazakhstan, which is gaining in "energy weight." Its position will allow it to raise its production of blue fuel to 50-70 billion cubic meters as early as 2010. A significant increase in production is expected at the Karachaganak (up to 26.8 billion cubic meters), Tengiz (up to 14.1 billion cubic meters) and Kashagan fields (up to 8 billion cubic meters). Astana is placing particular hopes on developing the Caspian shelf, which is reflected in a special

[9] See: Ye. Ogibenin, P. Grafov, "Popadet li turkmenskiy gaz v Evropu?" *Mirovaia ekonomika i politika,* No. 8, 29 October, 2002.

state program approved by the country's president on 16 May, 2003. Negotiations are continuing with Russian companies on joint development of the Khvalyn field, on carrying out exploration at the Central field, and on implementing projects at the Nursultan, Ulytau, Rakushechnoe-sea, and Darkhan structures.

By means of Russia's Gazprom, Ukraine will be able to step up its cooperation in the gas industry with Uzbekistan. As Russian sources note,[10] in terms of explored reserves of natural gas, Uzbekistan occupies third, and in terms of liquid hydrocarbons, second place among the CIS and Eastern European countries. Gas confirmed potential resources amount to almost 5.1 trillion cubic meters. Gas is currently produced at 27 fields, primarily in the southeastern parts of the country, where Shurtan and Kokdumalak are among the largest fields (which have been around for a long time and are to a great extent exhausted), as well as prospective structures being developed at Kandym and Garbi.

Development of this industry in Uzbekistan is being held back by the insufficient capacities for delivering gas even to its own consumers (in the south of republic until recently the network passed partially through Turkmenistan; now the Shurtan-Sherabad pipeline has been built with a throughput capacity of up to 1 billion cubic meters, which makes it possible not only to manage without Ashkhabad's services, but also deliver gas to Tajikistan and other countries. (Although only via the Bukhara-Ural route. Therefore Tashkent is interested in expanding the throughput capacity of the operating route, as well as in building new ones in both the northern and southern directions.)

Uzbekistan has recently been taking more active part in raising production (primarily at the Kandym field with supplies of more than 100 billion cubic meters), local gas supply, and export in cooperation with the Russian Federation. As of today it is already selling blue fuel to Gazprom. According to preliminary data, it delivered 5 billion cubic meters in 2003, and plans to deliver 7 billion cubic meters in 2004, with an increase to 10 billion cubic meters beginning in 2005. As for Kiev, in 2003 the Neftegaz Ukrainy Company purchased 2 billion cubic meters in Uzbekistan from Eastern Distribution Limited (with a favorable market situation, deliveries could be increased to 3 billion cubic meters).

In the future, it will be possible to step up cooperation between Kiev and Tehran (with respect to pumping its natural gas to Europe through Ukraine). The U.S. sanctions against Iran are making this alternative particularly urgent. The reality of this cooperation is confirmed by the free transit capacities of the Ukrainian GTS. But official negotiations with Iran on this issue, which began a few years ago, must be adjusted based on the new realities relating to the upcoming formation of an international gas consortium. What is more, the problem of building a gas pipeline from Iran to Ukraine (the most likely route is through the Southern Caucasus along the bed of the Black Sea and out onto the Crimean Peninsula) is associated primarily with the need to find investors and creating a special international consortium. The participants of this consortium would make a corresponding decision about financing the construction in a situation where the U.S. and other states supporting Washington's policy in the region still have a negative attitude toward Iran.

Ukraine's experience with the U.S.'s actions in 1998, when it had to renege on cooperating with Iran, justifies its fear of being obstructed by the above-mentioned influential players. The matter concerned the participation of the Kharkov Turboatom Company in delivering equipment for the Iranian nuclear power plant in Bushehr. According to some data, the cost of the contract amounted to approximately 130 million dollars. The profit Ukraine lost has still not been compensated.

Iran is also actively working on other natural gas and oil export projects, primarily of its supplies in the Caspian region. The most realistic is the Iran-Armenia gas pipeline project. At the end of December 2001, these countries signed an agreement on its construction (the first version of the agreement was signed as early as 1992). The sides confirmed their intention to finish drawing up the project documents as quickly as possible and begin construction work (100 km in Iranian territory, and 41 km in Armenia, the Megri-Kadjaran section). There were plans to create an international consortium involving Russia's Gazprom, the Gaz de France Company, the National Gas Company of Iran, and the Armenian Energy Ministry. The estimated cost of construction (with a gas pipeline capacity of up to

[10] See: *Nezavisimaia gazeta,* 11 July, 2000.

1 billion cubic meters a year) was 120 million dollars. Kiev could participate in this consortium, or at least in future tenders on construction work, as well as in the delivery and installation of special equipment made in Ukraine.