CASPIAN DILEMMA: HOW TO DELIVER BLUE FUEL TO THE EUROPEAN MARKET

David PREYGER

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

Vladimir OMELCHENKO

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

Globalization is increasingly encompassing regions traditionally closed to the outside world, including Central Asia. This is mainly having an effect on the relations between its countries and European states with respect to hydrocarbon deliveries and promoting the creation of a single geo-communication space. It is initially fraught with a certain amount of tension and discrepancy. But these negative elements will gradually abate, since the creation of this space is based on several objective integration factors. The most important of them include the formation of stability, security, and cooperation policies; mutually advantageous development of transnational communication lines; ensuring environmental balance; and protecting biological diversity.

Recently, most Caspian countries, emboldened by the data of geological surveys on large supplies of hydrocarbons promising significant economic and political dividends, have been independently emerging from the shadow of the major political players onto the geopolitical battle field. These dividends will make it possible for the Caspian countries to establish regulations in the region which will largely meet the interests of the regional elites and transnational companies. Of course, the priority issue in this struggle revolves around transnational communication routes, primarily deciding where to lay pipelines for delivering Caspian energy resources to the international markets. After all, pumping oil and gas not only ensures a stable source of hard currency paid for transit services, but also an

efficient, as well as long-term, lever of political influence. In other words, the distribution of energy resources is becoming not only an economic, but also a sociopolitical problem of international cooperation and competition. So all permissible (and others too) means and methods, from diplomatic and financial resources to specifically adjusted and precisely planned large-scale PR companies, are being launched into action.

American, European, Turkish, Japanese, and Chinese companies, along with the states who own the subsurface, are taking active part in what is going on in the region. Their activity is related to the fact that in addition to the acute shortage of funds, modern technology, necessary equipment and materials, and qualified staff, the Caspian countries do not have direct access to solvent markets. What is more, most of these countries are dealing with extremely urgent social problems, and a certain amount of political dependence on the leading world nations plays an important role. All of this is prompting the leaders of the region's republics to attract foreign capital into their countries' economy, which of course dictates both the need for cooperation among investors and the inevitable rivalry among them.

Ukraine is a serious contender for a role in the transportation of Caspian energy resources to the world markets. It has one of the largest transit systems of gas pipelines in the world (their outlet productivity amounts to about 170 billion cubic meters a year), whereby it also occupies a convenient geographic location between the Caspian's raw hydrocarbon base and the European sales markets. At the same time, Ukraine is one of the five largest world consumers of natural gas and is its solvent importer. The country's annual demand constitutes 75-80 billion cubic meters, while it produces only 20-22 billion cubic meters itself.

But despite such serious arguments, which allow it to be a successful player in this contest, Ukraine is still far from making full use of its potential due to official Kiev's weak political position in the Russia-Ukraine-EU triangle. This thesis is confirmed by the contradictory decisions regarding the Odessa-Brody pipeline project, the insufficiently precise definition of the goals and assignments for creating an International Gas Consortium (IGC) for managing and developing our country's gas transportation system (GTS), as well as the absence of a long-term strategy for forming a gas balance. Russia and the European Union, which have precisely defined and to some extent diametrically opposing goals (Europe is interested in further diversification of deliveries, whereas Russia wants monopolization of the market), with Ukraine occupying an unstable position between them, are able to block the decisions it proposes aimed at achieving national benefits. (The goals of Ukraine and the Caspian states in this sphere usually do not contradict each other, because all the interested parties want to create new transit corridors and the necessary conditions for diversifying gas delivery routes.) Nor can the role of the U.S. be ignored, which has the ability to defend its interests in oil and gas projects essentially anywhere in the world, including in the Caspian Region.

With the election of the new Ukrainian president, who declared a course primarily oriented toward European cooperation and a more pragmatic approach to the resolution of complex international problems, our country has been given new opportunities to form and implement a precisely substantiated national policy, both in defining the transportation routes of energy resources for our own needs and in rendering transit services to Russia and the EU countries. We will note that more than 34% of all the natural gas imported by Europe is currently pumped through the Ukraine's gas transportation network, and Russia's Gazprom depends on this system for 84% of its transit needs. But this policy can only be successful if the real strengths of each player on the gas market are taken into account, where the Russian Federation is represented by Gazprom. Ukraine depends on this large monopolist to realize its transit potential for pumping Russian and Central Asian blue fuel to the European markets and for ensuring its own needs. An increasingly larger percentage of Central Asia's gas resources is gradually falling under Gazprom's control. This is making it possible for the Russian Federation not only to carry out its long-term obligations to Western Europe, the Balkan countries, and Turkey,

but also make up for the shortages on its own domestic market arising from the growth in export and the noticeable drop in its own production.

Here it is appropriate to note that at present Russia is most active in forming gas transportation arteries in the Caspian Region. The Russian Federation occupies first place in the world in terms of proven supplies of natural gas (47 trillion cubic meters, 33.33% of the world supplies). In our opinion, several aspects can be singled out in Russia's activity in this sphere: strategic—its desire to monopolize the export of Central Asian energy resources; economic—its desire to reduce hydrocarbon transportation costs, organize new jobs, and re-export gas purchased in the region's states; and political—its desire to promote a beneficial shift in relations with the CIS states participating in this sphere, as well as with countries requiring Russian energy resources.

The significant annual increase in the consumption of blue fuel in European states (against the background of a drop in their own production and reduction in residual supplies) and the increase in production and explored resources in the Caspian countries are factors which define the transit vector of deliveries until at least 2020. The anticipated increase in the consumption of blue fuel is characteristic not only of EU countries, but also of the entire world. For example, in 1960, the percentage of natural gas consumption in the energy balance of the European countries amounted to less than 2%, in 2000, to more than 22%, and by 2030, according to forecasts, it will reach 29%. This is primarily due to the need for supplying more gas to those countries which are currently receiving it in insufficient amounts (for economic reasons), as well as due to the possible closedown of nuclear power stations in several states of the European Union.

Taking these trends into account, a new EU energy strategy has been drawn up, and the European Commission has prepared a set of regulatory and recommendation documents on development of the gas market and gas transportation networks of the European Union. They orient the organization's member states toward the priority consumption of blue fuel (compared with other energy resources); they envisage basic measures for diversifying its sources and delivery routes; they define the main principles for forming a single European gas market (in particular for simplifying transnational transit); and they set forth the priority routes and conditions for financing corresponding projects. The documents are based on the fact that the energy dependence of the European Union (in its expanded form) on the import of gas could increase from 39% in 2000 to 73% in 2020. In so doing, an annual consumption increase of 3% is forecast and more than 60% will be covered by the Russian Federation, Central Asia, and possibly Azerbaijan (after 2009).

Reference: Between 1998 and 2004, the consumption of blue fuel in Europe increased on average by 3% a year, exceeding 500 billion cubic meters in 2004. According to some estimates, by 2010, its consumption in Western and Central European countries will reach 630-650 billion cubic meters. Norway and Great Britain will be able to provide no more than 28% of the continent's demands (in 2002, they supplied 34%). The total amount of gas production in Europe and the export deliveries from Russia, Algeria, Libya, and Egypt will constitute 530-540 billion cubic meters. In this way, a free niche is opening up for its import from other regions, primarily from Caspian countries, of up to 90-110 billion cubic meters a year.

The potential of the Caspian states is confirmed by their proven natural gas supplies (35-40 trillion cubic meters, 26% of the world supplies), that is, it is almost three-fold higher than the total confirmed supplies of Algeria, Egypt, Nigeria, and Libya (the second vector of European imports). Together with Russia's proven supplies, the Caspian's deposits amount to approximately 58% of the world supplies (6.5-fold more than the same indices of African countries).

Based on this, it can be said that any measures the EU undertakes to further liberate and diversify the gas market in the mid and long term will not dramatically decrease Europe's dependence on

deliveries from the Russian Federation and Central Asian countries, they will only slightly assuage it. In this regard, we should expect an increase in the influence of the leading Western states and transnational companies on price formation and the choice of routes for new gas pipelines. The role of "energy diplomacy" will increase, which is an important component of the foreign policy of interested countries and interstate associations. But this will not have an adverse effect on the significance of the Caspian countries with respect to providing Europe with blue fuel. As for Ukraine, a major gas transit nation, its influence will probably increase even more (with respect to development of the IGC), despite the possible implementation of several projects to diversify sources and ways to deliver gas to the continent. In this respect, it is worth taking a closer look at the problems of implementing the IGC's ideas.

The IGC and Gazprom's Export Policy

The fate of the IGC project is inseparably linked with the reorientation of Gazprom's export policy from its own resource base to Central Asia's blue fuel. This is shown by the long-term contracts recently signed by Russia with several of the region's countries which envisage the purchase of their gas and joint implementation of several projects on its production. Thus, Gazprom is implementing its strategic plan aimed at creating a new eastern corridor for pumping Central Asia's blue fuel to the European market, keeping the Russian gas monopolist's interests in mind, which, to put it mildly, do not always coincide with the goals of its partners. It is precisely from this point of view that the latest agreements between Gazprom and National Joint-Stock Company Neftegaz Ukrainy should be evaluated. In particularly, on 27 October, 2004, they signed an agreement on cooperation at the investment phase of the International Consortium for Managing and Developing the Gas Transportation System of Ukraine, Ltd. work This phase is to begin in 2005 with building a 214-km Bogorodchany-Uzhgorod pipeline. The cost of laying the first section (50 km) is 54 million dollars. The document was signed under an agreement entered in Sochi on 18 August, 2004 between the Ukraine Cabinet of Ministers and the Russian Government on ensuring strategic cooperation in the gas sphere. It sets forth the conditions for implementing the Bogorodchany-Uzhgorod project, which in turn will ensure loading of the Ivatsevichi-Dolina and Torzhok-Dolina pipelines.

Reference: Today these gas pipelines are operating under far from optimal conditions: the first at 28% of its capacity, and the second at 12%. Implementation of all the investment phases relating to building the Novopskov-Uzhgorod gas route (length—1,500 km, pipe diameter, 1,420 mm) will increase Ukraine's transit capacities by 19-28 billion cubic meters a year. Experts from the Neftegaz Ukrainy Company forecast that, in so doing, the potential capacity of the Ivantsevichi-Dolina route can be increased to 70%, and of the Torzhok-Dolina pipeline to 90%. The tentative cost of the project is 2.0-2.5 billion dollars.

Implementation of the investment phases of the IGC is an integral part of the development plan for the Turkmenistan-Uzbekistan-Kazakhstan-Ukraine-Europe gas transportation corridor, which is important for European energy security. In order to carry out this task, there are plans to modernize (with Russia's active assistance) the Central Asia-Center (CAC) pipeline branches and lay the Alexandrov Gai (Northeast Kazakhstan)-Novopskov (East Ukraine) gas pipeline through the Russian Federation. It is forecast that the total cost of all this work will reach 10-15 billion dollars. In our opinion, Gazprom is primarily interested in the implementation of this project, since it, as already mentioned, is carrying out an active expansionist policy in this region. The first step taken

by the Russian gas giant to strengthen its foothold here was to create a joint venture in the summer of 2002 with KazMunaiGaz called KazRosGaz, which became a monopoly buyer of Kazakhstan gas. Now KazRosGaz is delivering the blue fuel produced at the Tengiz and Karachaganak fields, but this joint venture's sphere of responsibility also encompasses Moscow's and Astana's future joint gas projects in the region.

What is more, at the end of 2002, Gazprom entered an agreement with Tashkent on the purchase of Uzbekistan gas in 2003-2013 with increasingly growing volumes to 10 billion cubic meters a year. In 2003, Gazprom became the operator for transporting Central Asian gas through Uzbekistan, and in the summer of 2004 it signed a 15-year production sharing agreement (PSA) with the Uzbekneftegaz Company at the Shakhpakhty field (Ustiurt plateau). In addition to this, Uzbekneftegaz and Russia's LUKoil entered a PSA on assimilation of an area of the Kandym group of fields: the Khuazak, Shady, and Kungradsky sections. It envisages an increase in gas production in the Bukhara-Khiva Region (LUKoil's share is 90% and Uzbekneftegaz's is 10%).

Reference: Uzbekistan's percentage in profitable production sharing is 50%. In so doing, the PSA envisages the possibility of this share being increased to 80% (with an increase in the project's profitability). The PSA lasts for 35 years. The planned capital expenses amount to approximately 1 billion dollars. The confirmed geological supplies of blue fuel in the contract area amount to 283 billion cubic meters. Industrial production is to begin in the area in 2007, the anticipated maximum annual production is almost 9 billion cubic meters a year. Gas will be exported via the CAC pipeline. Gas is to be sold to Gazprom (at the pipe entrance) at a price of approximately 40 dollars per 1,000 cubic meters. What is more, some of the investor's product is to be sold in Uzbekistan at coordinated prices.

The agreements with Kazakhstan and Uzbekistan will make it possible for Gazprom to receive up to an additional 20 billion cubic meters of gas every year beginning in 2010. But, of course, the agreement signed in 2003 between Gazexport, Ltd. (Gazprom's 100% subsidiary enterprise) and the Turkmenneftegaz Company was pivotal for the Russian gas monopolist in the region. Within the framework of this agreement, a long-term purchase and sale contract for 1.8 trillion cubic meters of Turkmen gas was drawn up for 2004 to 2008, in accordance with which Gazexport acquired 4.5 billion cubic meters of blue fuel from Turkmenneftegaz in 2004. In 2006, these deliveries will increase to 10 billion cubic meters, in 2007 to 60-70 billion cubic meters, and beginning in 2009, they will reach 70-90 billion cubic meters annually.

Reference: Today annual production in Turkmenistan is approaching 55 billion cubic meters. Ten-twelve billion cubic meters are used for domestic consumption, and the rest is exported via the CAC transit gas pipelines which pass through Uzbekistan, Kazakhstan, and Russia. Pursuant to intergovernmental agreements, Gazprom is ensuring the transit of Turkmen gas through Russia to Ukraine. In addition, it is carrying out the functions of transit operator of Turkmen gas through Uzbekistan and Kazakhstan.

When analyzing Gazprom's export policy, we need to keep in mind its changes and try to explain them. Until recently, the company's management was not looking at the Central Asian vector as a priority, but placed its stakes on assimilating the fields of North Yamal, as well as the shelf of the Barents and Kars seas. In order to carry out its export obligations to the EU countries (in 2004, it exported 140 billion cubic meters of gas, while in the mid term there are plans to deliver 180 billion cubic meter

a year under already existing contracts alone), it is no longer sufficient for the Russian company to maintain its production at the current level of 540 billion cubic meters a year. Additional sources are needed. (Annual production in the Russian Federation is approximately 630 billion cubic meters, and consumption amounts to 390-400 billion cubic meters. To this we should add export to the Baltic and CIS countries of up to 100 billion cubic meters per year.) The IGC will need up to 80 billion cubic meters of gas annually to ensure the efficient operation of Gazprom's new pipelines, the Yamal-Western Europe and North European gas pipelines. But the Zapoliarnoe field put into operation in 2004 with a capacity of 100 billion cubic meters a year (peak conditions) can only compensate, until 2007, for the drop in production at the Urengoisky, Yamburgsky and Medvezhy fields, the supplies of which have been exploited by 65-85%. In order to maintain gas production in 2008-2015 at least at the current level, the gas monopolist must assimilate the Bovanenkovskoe and Kharasaveiskoe fields (their total supplies amount to 5.65 trillion cubic meters). The cost of these projects could reach 60 billion dollars (keeping in mind the transportation and social infrastructure). It is very difficult to evaluate their implementation risks, but it is clear that they will be significant due to the depth of the deposits, the need to create an extensive transportation network under permafrost conditions, and the company's complicated financial situation.

In this respect, it is understandable that Gazprom is keenly interested in Central Asian gas due to the much lower (3-5-fold) investments necessary for carrying out the company's export program, as well as due to the possibility of providing it with resources at higher rates. But this also entails problems related to the different approach of the Central Asian states to cooperation with Gazprom, on the one hand, and to contradictions among the region's countries themselves, on the other. Among them, Turkmenistan occupies the most advantageous position in terms of export potential of blue fuel. But, despite the positive dynamics of cooperation between Ashghabad and Gazprom, several problems have been designated in this sphere. For example, after evaluating the situation on the world markets, Turkmenistan has been trying since 1 January, 2005 to increase the price of gas from 44 to 60 dollars for 1,000 cubic meters. In turn, Russia and Ukraine, who have a monopoly on the transit of Turkmen gas, are putting pressure on purchase prices by re-exporting blue fuel to Europe at a good profit. As for the prospects of the Russia-Turkmenistan-Ukraine triangle, a big game may unfold around resource provision, prices, and gas transit conditions.

The second problem concerns a reliable evaluation of the hydrocarbon supplies of the region's states. Despite the numerous assertions by official Ashghabad that its subsurface supplies are inexhaustible, Gazprom, obviously orienting itself toward Azerbaijan's experience of oil resource estimation, asked Turkmenistan to carry out a corresponding audit. At present, it is being conducted by American and British companies, after which a final decision will be made on modernizing Central Asia's pipeline systems, which could also have an effect on the format of Russian-Ukrainian relations with respect to the development of the IGC. In this sense, replacement of the Hungarian operator for delivering Turkmen gas to Ukraine (Eural Trans Gas) with RosUkrEnergo, created by representatives of Kiev and Moscow, had a perceptible effect on the interests of the triangle's countries. It is considered expedient for Ukraine to insist on gas being delivered by independent producers to satisfy domestic demand (up to 20 billion cubic meters a year) at the talks with Russia.

The revived trans-Afghan gas pipeline project, the feasibility report on which was drawn up by the Asian Bank of Development in January 2004 (with the participation of a group of British experts), could have a significant effect on the relations in the Russia-Ukraine-Turkmenistan triangle. It is presumed that this route, with a throughput capacity of 33 billion cubic meters a year and length of 1,680 km, will run from Dovletabad (Turkmenistan) through Afghanistan and Pakistan to India, and the cost of the work will constitute 3.3 billion dollars. This route is potentially threatening not only to Ukraine, but also to Russia, since it will carry Turkmen blue fuel, which may cause a significant deficit in their gas balance. What is more, Ashghabad will put forward significant arguments

in favor of a tougher price policy. But the complicated political situation in Afghanistan and the smoldering Indian-Pakistan conflict are squelching any hope of the project being implemented soon.

Gazprom came to terms with Tashkent on gas prices, but questions relating to investments in the development of the Uzbek section of the CAC gas transportation system have still not been resolved. It is not advantageous for Uzbekistan to create significant capacities for pumping Turkmen gas through its territory, particularly since it is not the operator of these deliveries. Tashkent's current transit potential does not exceed 43-45 million cubic meters a year. By 2007, it could increase to 55 billion cubic meters, which will require investments of approximately 400 million dollars. As for Turkmenistan, it has already invested approximately 300 million dollars in the development of CAC gas pipelines on its territory and plans to invest up to another 100 million dollars. This will allow Gazprom to pump 80 billion cubic meters annually beginning in 2007. What is more, KazTransGaz invested more than 230 million dollars in its section in 2001-2002, thus raising its throughput capacity to 60 billion cubic meters a year.

But neither modernization of the CAC in Uzbekistan, nor of the entire route as a whole (under current projects) will resolve the problem of pumping the 100-110 billion cubic meters of gas annually stipulated by the contracts. According to experts, another branch will have to be laid within the CAC to resolve this problem and an additional gas pipeline with a capacity of up to 30 billion cubic meters a year built at a cost of 2-2.5 billion dollars (preliminary estimates). Its route through the Central Asian countries is at the discussion stage. Ashghabad, which at present has complicated relations with Tashkent, is suggesting laying the pipeline through the central part of Turkmenistan (from the Sovetabad group of fields to the Caspian coast with access to Kazakhstan in the Beineu region). But Uzbekistan is expressing a different opinion on this issue. Therefore, rather tough talks aimed at satisfying the interests of all the project participants are in the offing.

Kazakhstan, which has the necessary resources for modernizing the CAC gas pipeline system on its territory and also has a large number of managers in the oil and gas industry who are well versed in the subtleties of international business, is trying to carry out its own policy in this sphere. Astana is willing to grant Gazprom certain preferential conditions with respect to joint implementation of production projects, primarily in the legislative area (during the past year, the attitude toward foreign investors has toughened up), but at the same time is trying to independently penetrate the European gas market.

Since Ukraine occupies an advantageous geographic location between Russia and the energy-producing countries of the Caspian Region and, in so doing, has corresponding transit possibilities, its interests in increasing transit coincide with the Russian Federation's economic and geopolitical interests in gas deliveries. Therefore, there are certain grounds for predicting an increase in the role of Ukraine's GTS in the export of Caspian blue fuel to the European markets. Taking into account the significance of Ukraine's GTS in supplying gas to Europe and its integrating role in the Eurasian gas transportation corridors, it is expedient for official Kiev to initiate several agreements with the European Union in order to strengthen its foothold in the European energy security system. As a state wishing to integrate into Europe, Ukraine should, in our opinion, step up its efforts in this area, keeping in mind, of course, the balance of interests between the exporter countries and hydrocarbon consumers. By offering its initiatives for developing the trans-regional communication infrastructure, it will objectively find itself in the epicenter of interests of the three leading geopolitical players (the U.S., Russian Federation, and EU), each of which has its own goals. The difficulty lies in the fact that orientation toward only one of the three power centers will lead to these initiatives being blockaded by the other interested sides, which will directly affect the foreign political status of our country.

So flexible well-considered actions in implementing international energy projects, definitely keeping in mind the balance of interests among the main power centers, including in implementing

the IGC project, are an important prerequisite for consolidating Ukraine's position on the playing field of the European gas market. The problem of blue gas import diversification for domestic consumption can be resolved at the same time.

The Experience of European States in Diversifying Gas Markets as a Lesson for Ukraine

As already noted, Ukraine is meeting only about 22% of its needs by means of its own gas production, and the rest is compensated by imports from Russia and Turkmenistan (via the Russian gas transportation system). And almost all the West European countries have at least three independent sources each for procuring gas. In 1991, the Central European states began implementing a program for diversifying the import of blue fuel, since this was one of the conditions for their entry into the EU. But not all of them have achieved the desired result, many still depend up to 80-100% (that is, critically) on one supplier, Russia's Gazprom. Ukraine is also finding it quite difficult to resolve this problem. One of the objective reasons for this is the historically developed mono-orientation of its gas supply system toward Russia and the need for large investments (at high risks) in creating access to alternative sources. So this kind of program must be implemented in stages.

At the first stage, Ukraine should gain a stronger foothold as blue fuel purchaser in three Central Asian countries: Turkmenistan, Ukbekistan, and Kazakhstan. At the second, it can achieve further diversification by replacing gas deliveries on the basis of so-called swap contracts with the use of the GTS's transit possibilities. The third stage envisages delivery of Iranian gas (and possibly of other contiguous states to it) to Ukraine and partially to Europe along alternative routes, which must still be defined. But this is only realistic if Ukraine cooperates with several European states and creates favorable opportunities for attracting large-scale investments. What is more, an important condition at this stage is a high level of gas market liberalization in our country and its gradual integration into the European market (in terms of price formation mechanisms and operational conditions).

Iran's proven supplies of natural gas are close to 27 trillion cubic meters (second place in the world). The most promising field is South Pars, the deposits of which are estimated at 8.4 trillion cubic meters. Large foreign oil and gas companies operate in the country: ENI, Elf Aquitaine, British Petroleum/Amoco, Saga Petroleum, Total, Gazprom, CNPC, and Sinopec. Since it is about to significantly boost its gas production, Tehran is looking for markets to sell it. For example, as early as 1995, a contract was entered for delivering 3 billion cubic meters in 2000 and up to 10 billion cubic meters in 2005-2010 to Turkey via the Tebriz-Ankara pipeline, which is 1,420 km in length. At that time, an agreement was entered on transit of 10 billion cubic meters of Turkmen gas a year via this route through Iran to Turkey. But these projects have not yet been implemented.

In August 2004, the Nabucco International Consortium, which includes OMV, Botas, MOL, and Bulgargaz, founded the ABN Amro Investment Bank as a financial advisor on the gas pipeline construction project from the Caspian Region to Europe (its route has still not been defined). One of the main suppliers, according to the analysts' forecasts, was to be Iran. The length of the route is more than 3,500 km, and the capacity is 30 billion cubic meters. Seventeen to twenty billion cubic meters a year are to be pumped to the Austrian city of Baumgarten (the junction with the European gas pipeline system), the rest is to be distributed by transit countries. It is expected to go into operation in 2009-2012. The fact that the EU allotted 3.3 million dollars to draw up its feasibility report shows its serious attitude toward this project. There are four major alternative routes for transporting Iranian gas to Europe, with a few modifications for each (in some alternatives, Turkmenistan figures as a supplier). The starting point of the future gas pipeline is the South Pars field (provisionally Kan-

gan). Today, the following routes are being discussed: Iran-Turkey-Georgia-Black Sea (Poti-Feodosia)-Ukraine-Europe; Iran-Turkey-Black Sea (Sinop-Feodosia)-Ukraine-Europe; Iran-Turkey-Bulgaria-Rumania (Serbia)-Hungary-Austria-Germany (in so doing, a possible modification is for part of the gas flow to be sent from Bulgaria to Ukraine by reversing the existing Talnoe-Izmail-Rumania-Bulgaria pipeline). Finally, the fourth alternative: Iran-Armenia-Georgia-Russia-Ukraine-Europe (here there is a possible modification from Poti to Feodosia with transfer across the Black Sea). According to the Transgaz Institute (Ukraine), 7-8 billion dollars in investments are needed for delivering gas to our country and 10-11 billion for extending the pipeline to other European countries.

Another possible alternative also deserves attention: Iran-Turkmenistan-Uzbekistan (the CAC gas pipeline)-Kazakhstan-Russia-Ukraine-Europe, in which the economic parameters look more enticing, but the problem of route diversification cannot be resolved. But it will only become urgent after 2008, and only then if gas production in Russia significantly decreases, which could happen due to difficulties in assimilating its new fields in the Arctic zone and the need to compensate for raw material shortages in order for Gazprom to carry out its export obligations.

In terms of economic expediency and political factors, we think the third version is most preferable for Ukraine. And this version essentially coincides with the Nabucco Concern's project. Its modification, based on reversing the Bulgaria-Rumania-Ukraine (Talnoe-Izmail) pipeline and transportation of Iranian gas with hook-up to the Soiuz, Progress, Urgenoi-Pomary-Uzhgorod gas pipeline system, will make it possible for Ukraine to ensure annual deliveries of 10-15 billion cubic meters of blue fuel from an alternative source via a route not associated with Gazprom.

The other alternatives have several significant shortcomings. First, by resolving the problem of delivery source diversification, they are not resolving the question of alternative routes. Second, the construction of a gas pipeline along the seabed of the Black Sea at a great depth is creating technological, ecological and economic difficulties, although the experience of laying pipelines along the Blue Stream route provides grounds for cautious optimism here too. The building of gas pipelines of more than 3,500 km in length is economically advantageous when transporting no less than 55-60 billion cubic meters of gas, for which two branches much be lain with a pipe diameter of 1,420 mm and a working pressure of 7.5 MPa. So when creating deep-water routes of significant length, it is expedient to lay 3-4 branches of lesser diameter and greater pressure, which significantly raises the cost of the work. And projects for transporting Iranian liquid natural gas (LNG) are promising for diversifying the delivery of energy resources to the European Union countries (from the viewpoint of ensuring their energy security). Taking into account Iran's current problems in exporting blue fuel to the world markets (the U.S. sanctions, difficulties in attracting large foreign investments, the risk level, and so on), Tehran has begun to look for ways to transport liquid gas. In particular, it is developing four projects with a total capacity of 42 million tons: NIOC LNG, Pars LNG, Persian LNG, and Iran LNG. This work will tentatively be finished (entry into the production stage) in 2009-2012.

The question of delivering liquid gas to Ukraine may not become urgent until 2020. This is due to the rather high price of LNG (compared with the price of the gas used now), as well as the need to create an expensive infrastructure for its reception and use, which today is essentially nonexistent in our country.

So our analysis shows, first, that a very urgent problem exists relating to further deliveries of blue fuel from the Caspian countries to the European markets. And second, it identifies Ukraine's opportunities with respect to choice and implementation of gas transportation routes, taking into account its national interest in ensuring energy security and efficient use of the transit potential of the country's powerful gas transportation system.