ENERGY POLICY

CASPIAN OIL: ITS EXPORT ROUTES AND TRANSPORTATION PROBLEMS

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Gaining access to the world market will place the new oil- and gas-producing states of the Caspian region in intense competition with the Near and Middle East and Russia, the largest oil and gas exporters. The country that can offer reliable delivery of these commodities at the lowest production and transportation costs will come out on top. After all, the problems encountered in this area are having a direct effect on the economic efficiency of oil-producing projects, since developing even low-capacity fields might be highly profitable if they are conveniently located, making it possible to deliver hydrocarbons to the markets at minimal cost. Whereas the economic efficiency of a field is significantly reduced if an expensive transportation infrastructure has to be built to deliver its oil to the consumers. Doing a cost appraisal requires looking at the key factors that influence a decision in favor of a particular route (or several). Here we should keep in mind the total and annual export volume, production costs, particular legislation features and rights in the producing and transit countries, whether the oil's quality can be preserved during shipment by diversified routes and with other types of transportation, natural geographic and export limitations, the special features of the transportation infrastructure, supply forecasts, demand prospects, and so on.

The author of this article is interested not so much in the prospective oil supplies in the region, the development of which might begin in the future, as in the estimated economic potential of the surveyed fields. This will make it possible to make at least an approximate estimate of how much it will cost to deliver oil to the world market within the framework of the international consortiums actually in operation. In order to do this, we chose four large consortiums created on the basis of production sharing agreements (PSA) and already engaged in production or about to begin it in the next few years (see Table 1). One of them is the Azerbaijan International Operating Company (AIOC), which is developing the Azeri-Chirag-Gunashli field. And there are three consortiums operating in Kazakh-

stan: TengizChevrOil (TCO, developing the Tengiz and Korolevskoe fields), the Karachaganak Integrated Organization (KIO, working the Karachaganak field), and the Kazakhstan North-Caspian Operating Company (Agip KCO, developing the Kashagan field).

Table 1

Individual Oil Projects in Azerbaijan and Kazakhstan

International Consortiums	Supplies, mill. tons	Investments, bill. dollars	Production, mill. tons/year				Transportation Infrastructure
			2002	2005	2010	2015	
AIOC	730	12.7	6.5	20	50	50	Baku-Supsa/ Novorossiisk BTC
TCO	1,200	20	12.5	14	25	25	CPC
KIO	400	5	5	12	20	20	CPC
Agip KCO	1,700	9*	—	6.5	20	60	BTC
Total	4,030		24	52.5	115	155	

*—first stage.

Sources: oil companies, MEDIA-PRESS, CNA, RusEnergy, and others.

Special Features and Restrictions of the Transportation Infrastructure

When choosing prospective routes for exporting Caspian oil, present and future demand (and supply) should be kept in mind, along with the natural geographic limitations of its transportation to the world markets. From this standpoint, oil delivery depends not only on the amount, but also on the location—the region lies between the main present and future sales markets (Europe and Asia), on the one hand, and between the main suppliers (the Near and Middle East and Russia) to the world markets, on the other.

This market has already been divvied up among the main suppliers, and the main transportation routs to the main consumers have already been established (see Table 2). For example, in 2002 total production exceeded 3.5 billion tons, and export 1.9 billion tons.[1] The largest exporters are the countries of the Near and Middle East, Africa, the former U.S.S.R., and Latin America (44%, 15%, 13%, and 12% of total export, respectively).

A well-developed infrastructure, particularly sea transportation and a terminal network, is minimizing the transit risks in keeping with the coordinated rules of the game, which is played on the principles of fair competition, non-discrimination, mutual complementarity, and mutual advantage. In 2002, essentially all of the world's exported oil was transported by tanker—approximately 1.9 billion tons (55% of the production volume). The "narrowest places" of oil traffic in the world are[2] the Hormuz (750 million

[1] See: *The BP Statistical Review of World Energy*, June 2003, pp. 7-10.

[2] See: Dr. Jean-Paul Rodrigue, *International Oil Transportation*, Dept. of Economics & Geography, Hofstra University, New York., U.S.A., 1998.

Table 2

Structure of Deliveries, Consumption and Production of Oil in the World in 2002 (*mill. tons*)

Deliveries	TO							Con-sump-tion	Produc-tion Domestic
	U.S.A. and Canada	Latin Amer.	Europe	Japan	China	Asia-Australia	Total		
FROM									
U.S.A., Canada	0	16	11	4	1	6	38	984	486
Latin America	202	0	23	1	1	8	235	296	514
Europe	82	4	0	1	4	10	101	771	326
Former U.S.S.R.	10	7	215	1	8	23	264	154	458
Near and Middle East	122	15	161	195	39	327	859	207	1,015
Africa	75	16	123	9	16	47	286	119	376
Japan	0	0	0	0	2	2	4	243	0
China	1	1	0	4	0	11	17	259	169
Asia-Australia	21	0	54	35	30	0	140	491	212
Total	513	59	587	250	101	434	*1,944*	*3,524*	*3,556*

Estimated according to: The BP Statistical Review of World Energy, June 2003.

tons of oil a year), Malacca (500 million tons), Bab al Mandab (150 million tons) and Turkish straits (80 million tons), and the Suez (150 million tons) and Panama canals (50 million tons). Interruptions in their operation lead to sharp fluctuations in price for this commodity and to the potential threat of a breakdown in oil delivery. Direct export of oil via pipelines is extremely limited—there are only isolated cases in the world where it is pumped "dry land-dry land" (for example, the Druzhba pipeline that runs from Russia to Europe), although oil pipelines play a major role in transportation within countries and in delivering oil from field to port.

It is obvious that since its resources and annual supply level of oil for export are lower than 10% of the world indices, the Caspian region is unlikely to become the "second Persian Gulf." Nevertheless, it is of world significance and its role will be extremely important, since a steady rise in demand is forecast, which corresponds to the growth in the world economy. The greatest demand for Caspian oil is anticipated in the West European countries. In particular, a significant percentage of Europe's and North America's demand is satisfied by Norway and Great Britain (in 2002, their net export amounted to approxi-

mately 275 million tons), which have an R/P ratio (reserve/production) for 5-8 years. This means that by the end of the decade, production is expected to drop at the North Sea fields and, as their supplies are exhausted, demand for Caspian oil to replace it will increase in these regions. Caspian oil has its sights set on the U.S. market (where the demand in 2002 was approximately 540 million tons), which will also feel the pinch from the reduction in deliveries of North Sea oil, and on the Chinese market, where a significant increase in oil demand is expected over the next decade.

Today oil from the region goes to the ports of the Black and Baltic seas and to Eastern Europe via pipeline. A relatively small amount also goes by rail (see Table 3). In 2001-2002, total export amounted to 46 and 36 million tons, respectively, whereby most of it was transited through Russia. One of the most important factors restricting a further increase in the region's export potential and satisfaction of the aforementioned demand is the absence of efficient transportation systems to the world market. Geographic location (distance from the main sales markets and no direct access to the sea) gives rise to the need to build major oil pipelines and transit routes through at least one, and frequently two, three, and more countries. Since the mid-1990s, two conceptions for the export of Caspian energy resources are vying with each other—in the horizontal and vertical direction—that is, to the West and East or to the North and South. The first relies on projects to build the Baku-Supsa, Baku-Tbilisi-Ceyhan (BTC), and Kazakhstan-China oil pipelines, and the Baku-Tbilisi-Erzerum and Turkmenistan-Afghanistan-Pakistan-India gas pipelines. The second is based on increasing the throughput capacity of the pipelines running through Russia—the Caspian Pipeline Consortium (CPC), the Atyrau-Samara pipeline and its connection with new Russian ports on the Baltic Sea,

Table 3

Structure of Oil Export from the Caspian Sea Countries in *2001* and 2002 (*mill. tons*)

Deliveries	*VIA*							
	Russian Ports			Ukraine, Belarus		Georgia	Others*	Total
FROM	Novoros-siisk, Tuapse	CPC	Pri-morsk	Odessa	Druzhba	Supsa		
Kazakhstan	*3.3* 3.6	*1.5* 12.5	*0* 0.8	*8.1* 6.6	*2.5* 3.6		*7.1* 3.4	*22.5* 30.5
Azerbaijan	*2.5* 2.5					*5.8* 6.2	*0* 0	*8.3* 8.7
Turkmenistan							*5.6* 6.4	*5.6* 6.4
Total								
2001	*5.8*	*1.5*	*0*	*8.1*	*2.5*	*5.8*	*12.7*	*36.4*
2002	6.1	12.5	0.8	6.6	3.6	6.2	9.8	5.6

*—export deliveries without the use of pipeline transportation.

Sources: *Neftegazovaia vertikal*, No. 2, 2003; Transportation Ministry of Georgia [www.mtc.gov.ge].

as well as on building the Kazakhstan-Turkmenistan-Iran (KTI) pipeline. The main characteristics, transportation conditions, and several features of some of the projects in operation or soon to be in operation are presented in Table 4.

Table 4

Main Export Oil Pipelines of the Caspian Region Countries

Oil Pipelines	Length, km	Investments, bill. dollars	Capacity,[1] mill. ton/year	Tariff,[2] doll. per 100 tons/km	Tariff for entire length of route, doll./ton
Baku-Supsa	830	0.565	7.5 (10)	0.39	3.2 (1.9; 1.3)[5]
Baku-Novorossiisk	1,410	0.4-2	5 (15)	1.11	15.67
CPC	1,510	3.2	28.2 (67)	1.72	26
Atyrau-Novorossiisk	2,160		15 (25)	1.5; 0.73	19
Atyrau-Primorsk	2,660		same	1.5; 0.73	22.5
Atyrau-Odessa	2,380		same	1.5; 0.73; 0.75	20.5
Atyrau-Poland	2,360		same	1.5; 0.73; 0.5	20
BTC[3]	1,750	2.95	50 (60)	1.08	19[6]
Aktau-BTC[4]	375-500	—	>20	—	—

1—in brackets possible increase in capacity;

2—tariffs in the transit countries (if there is no standard tariff);

3—under construction;

4—at the negotiation stage;

5—only transit payments in favor of transit countries;

6—Black Sea Energy Survey, OECD/IEA, 2000, p. 28.

Sources: Transneft, MEDIA-PRESS, RusEnergy, and so on.

The Russian Direction

The main export routes (with the exception of Baku-Supsa and BTC under construction) pass through Russia. This lop-sidedness has led (and is leading) to significant difficulties for the producing countries. These difficulties include legislative problems and losses incurred from a complete halt (or reduction) in transit volume and mixing different grades of oil in these pipelines.

Mixing grades of Caspian oil gives rise to major losses for exporters. Until recently only Russian oil was in demand on the world market—Urals and Siberian Light—and oil from Azerbaijan and Kazakhstan was mixed with Russian oil when it was pumped through the pipelines of the Transneft transportation monopoly and sold on the market as a Urals mixture. Since Caspian oil is higher in quality than Russian, its exporters incurred perceptible losses, and Russian companies received unjustified profits. When Caspian oil began to be exported directly, bypassing the Transneft pipelines (via Supsa and the CPC), quotations for new grades (Azeri Light and Tengiz) appeared on the world market. The difference in price between these grades and Russian Urals between October 2001 and December 2002 amounted on average to 1.81 and 1.15 dollars a barrel.[3] And in 2002 alone, Azerbaijan lost approximately 33 million dollars from the deterioration in oil during its pumping via the Transneft system (2.5 million tons), whereby Urals exporters received the same amount in additional bonuses. In this respect, the interest of the Russian side (in addition to the transit revenue) in delivering Caspian oil via its own pipelines is understandable. According to specialists, after the CPC goes into operation, Russian oil companies will sustain annual losses of approximately 200 million dollars from the decline in quality of the exported oil.[4]

Whereas this problem is essentially surmountable and depends on the goodwill of the Russian structures, the natural geographic restrictions on transportation, along with present and future demand and supply, pose a significant obstacle to increasing the export of Caspian oil using Russian routes. The closest Russian access points to the world market are the Black Sea ports, to which approximately 19 million tons of Caspian oil were shipped by pipeline and exported in 2002. What is more, this index is expected in increase to 35 million tons soon, in particular by making full use of the CPC's capacities, since the Caspian countries will be able to deliver oil to the Mediterranean countries of Europe via this route. In this respect, the southern direction (through Novorossiisk) has the highest volume, particular after the Sukhodolnaia- Rodionovskaia pipeline went into operation in 2001, which allows oil to be delivered to Novorossiisk without going through Ukraine. But it will be difficult to step up export even more, since this port often has to shut down due to poor weather conditions. For example, in 2002 it was closed for 85 days (an average of almost two days a week), which is causing the oil companies major losses due to the reduction in export volumes.

Another even more significant obstacle to increasing export volumes through the Black Sea ports is the low throughput capacity of the Turkish straits. Due to the intensive traffic through these straits and the high environmental pollution this is causing to the straits themselves and the nearby territories, it would be a good idea to at least partially review the Montreux convention on improving safety measures for shipping vessels. This will make it possible to draw up a more efficient and rational transportation-trade policy. But despite these measures, it is obvious that shipment through these straits cannot be increased indefinitely. What is more, it is becoming increasingly expensive, particularly due to the safety measures undertaken.

The second direction for the export of Caspian oil is the Druzhba pipeline, via which Russian and Kazakhstan oil is delivered to Eastern Europe: through Belarus to Poland and Germany, and through Ukraine to the Czech Republic and Hungary. This route, by means of which 3.6 million tons of Kazakhstan oil were pumped in 2002, has a significant shortcoming, in addition to the special features mentioned above (the mixing of different grades of oil and so on)—oil is delivered to a market where the consumers have a wide range of choices for diversifying delivery sources and the suppliers have a sales network that is limited to the pipeline transportation infrastructure. In this situation, the balance between demand and supply for oil is established at a price lower than when all other things are equal. For example, the price of Urals grade oil delivered to the countries of Eastern Europe via the Druzhba pipeline is on average one dollar less per barrel than the price of this oil in Novorossiisk, and $1.4 less than in Northeast Europe or in the Mediterranean states,[5] which will incur great losses for the Caspian exporters at the proposed delivery volumes.

[3] See: *Petroleum Argus, Nefte Transport*, Vol. I, 11 December, 2002, p. 27.
[4] See: *Vedomosti*, 1 June, 2001.
[5] See: *Petroleum Argus, Former SU Energy*, Vol. VIII, No. 3, 24 January, 2003, p. 13.

A significant increase in capacity is expected in the next few years in the Baltic direction (as a possible alternative for exporting Caspian oil). This is because the first section of the Baltic pipeline system (BPS) will go into operation, making it possible to export 12 million tons of oil a year from the Russian port of Primorsk (with the prospect of increasing it to 42 million tons). But in 2002, less than one million tons of Kazakhstan oil was shipped via BPS, so to ensure maximum loading of this port, Transneft is planning to increase the transit of Caspian oil and reorient export from the Baltic ports.

Such actions by the Russian state structures (decisions on the loading of pipelines are made by a special governmental commission) are causing oil companies direct economic losses due to the deterioration in oil transportation conditions from Primorsk to Western Europe compared with shipment via the port of Ventspils. For example, the cost of shipping oil by tanker to Rotterdam is $6-9 more expensive per ton.[6] What is more, during the winter there are difficult navigation conditions in the Primorsk region: although the Finnish Gulf only gets completely iced over once every ten years, its eastern part is ice-bound every year. This means that ice breakers must be used to escort tankers into the port and out again, which causes tankers to stand idle, as well as other losses, estimated at a total of 1.5 billion dollars a year.[7]

In this way, all the routes in the Baltic and Black Sea export directions (via Primorsk, Ventspils, Novorossiisk, and others) have one shortcoming in common—the shallowness of the Great Belt, Öresund (Sund) and Bosporus straits (approximately 12, 8, and 20 m, respectively) restricts shipping, which means that tankers with a dead weight of no more than 80-100,000 tons can pass through the Baltic Sea, and with no more than 150,000 tons through the Black Sea. This significantly raises transportation costs and also restricts the potential oil sales market to the northwest and Mediterranean regions of Europe.

What is more, the Russian structures, which are pursuing the energy and economic interests of their own state, are implementing a strict policy. And Russia, in our opinion, has different priorities at different stages in the development of the Caspian Sea's resources. In the beginning, it was mainly interested in restricting access of Caspian oil to the world market as much as possible, thus allowing it to retain its own oil sales markets and ensure involvement of Russian companies in the Caspian projects, for which every possible mechanism was used. At present, Russia is placing top priority in shipping Caspian oil for export through its own pipelines, which will ensure its control over this activity in order to obtain economic profit (from transit and the difference in the quality of oil), as well as political dividends both from the producing countries and from the oil consumers.

Southern and Eastern Directions

The southern direction for exporting Caspian oil has certain prospects. The northern provinces of Iran are experiencing a significant energy shortage, which resulted in the need to ship oil from fields in the country's south and in high transportation costs due to the difficult geographical conditions in the area. In 2002, Astana revived the oil swap transactions interrupted in 1998 with Tehran (when in exchange for its oil delivered to the northern regions of Iran Kazakhstan received an equivalent amount of oil in the Persian Gulf) and by the end of the year exported approximately 1 million tons. Oil is shipped in tankers through the Caspian Sea to the Iranian port of Neka, from where it is pumped by pipeline to Tehran and Tebriz. The KTI pipeline project has been drawn, which is up 1,710 km in length, has a capacity of 25 million tons a year, and costs 2 billion dollars (to Tehran).

But if the delivery volumes exceed the demand of the North Iranian oil refineries (estimated at 7 million tons a year) and the oil is shipped on south of Tehran, not only the technical, but also the

[6] See: *Petroleum Argus, Nefte Transport*, Vol. I, p. 28.
[7] See: *Izvestia,* 14 April, 2003.

political and economic aspects of the transit will change, since on the way to the Persian Gulf the pipeline will pass through extensive mountainous regions, which will increase Tehran's transportation costs. To compensate them, the transit fees for foreign suppliers will have to be raised, and this will lower the route's commercial profitability. What is more, Iran itself is a major oil exporter, and if it is interested in replacing several million tons of its oil, it is unlikely to be interested in selling several tens of millions of tons of someone else's crude oil. If the price of oil drops, Iran, as a member of OPEC, on the one hand, will have to carry out this organization's decisions on cutting back production, and as a transit state, on the other, ensure uninterrupted delivery from the rival countries. The appearance of this oil on Tehran's "native" markets will create unnecessary competition, which may prompt Iran to cut back transit volumes to a certain level or set transportation fees that include compensation for possible losses due to the increase in competition. This will make the economic efficiency of Iranian transit dubious.

The eastern direction is extremely promising for exporting Caspian oil since a steady rise in demand is noted in China: in 2001, net import of this raw material amounted to 76 million tons, and in 2002, to 90 million tons.[8] At present, Kazakhstan is delivering oil to the PRC (100,000 tons a month) by rail (via the Druzhba-Alashankou crossing). A pipeline project has been drawn up for pumping oil in this direction. Its construction would mean the creation of a new export corridor, access of Kazakhstan oil to the dynamically developing Chinese sales market, and, if a branch of this route is built to the south, also assimilation of India. Astana would not be so dependent on sales to Europe, where it currently sells almost all of its oil, and would also reduce its transit dependence on Russia, via which this raw material is transported. China would have an alternative to importing oil from the Persian Gulf, where the PRC gets almost 40% of all the oil it purchases. But implementation of these projects is being obstructed for several objective reasons, in particular, the demand for oil is mainly in China's eastern regions where it is not economically advantageous to lay a pipeline. But if there is a sufficiently large and steady demand for oil in the XUAR and, what is more, if the pipeline can be "broken down" into several smaller, economically independent sections of the entire Chinese "pipe," the route from Kazakhstan to the PRC will be economically efficient. The Atyrau-Kenkiyak oil pipeline, which opened in 2003 (with a capacity of 6 million tons a year), belongs to this link, as well as the project for the Kenkiyak-Aralsk-Kumkol route, which is now at the feasibility report stage (this work should be finished by 2005). At the first stages, these pipelines will pump oil to the West, but after reconstruction and construction of the branch from Central Kazakhstan to the Chinese border, they can be used in reverse. The prospects for this direction will significantly increase in the event Chinese companies increase the corresponding resource base in Kazakhstan. Such prospects arose at the beginning of 2003, when the British Company BG, one of the participants in the Agip KCO consortium, which is developing the offshore Kashagan field (the Kazakh sector of the Caspian Sea), announced its withdrawal from the project and sale of its share (16.66%). Two leading Chinese companies expressed the desire to buy this share for more than 1.2 billion dollars—the Chinese National Offshore Oil Corporation (CNOOC) and Sinopec. But other members of the consortium (Agip, Royal Dutch/Shell, and others), taking advantage of their privileged right to purchase, bought the BG share and divided it proportionally among them. This (as well as Russia's decision to build a pipeline from Siberia to Eastern China) was evaluated as a serious failure of the above-mentioned project, undermining the prospects for exporting Caspian oil in the easterly direction.

Western Direction

We have singled out two routes in this direction, which pass through Georgia: the Baku-Supsa and the BTC pipelines. The first of them is partially free of the shortcomings characteristic of routes to the

[8] See: *The BP Statistical Review of World Energy*, June 2003, pp. 7, 10.

Russian ports on the Black Sea: the mixing of different grades of oil, as well as problems of ownership and state regulation of the activity of these pipelines (such as the CPC). Based on agreements that have international status, the right to possession and use (but not alienation) of the Baku-Supsa pipeline belongs to AIOC (for 30 years), and the fee for pumping oil along its entire length is 3.2 dollars a ton, which is essentially the same as the tax payments to the transit countries (see Table 4). Nevertheless, the main shortcoming of this route lies in the limited throughput capacity of the Turkish straits and the impossibility of using large tankers (with a dead weight of 300,000 and 500,000 tons).

The main export route in the western direction, the Baku-Tbilisi-Ceyhan (BTC) pipeline, does not have these shortcomings. This pipeline has a throughout put capacity of 50 million tons a year and will go into operation in 2005. But despite the obvious virtues of this route, its implementation is meeting with tough resistance. An immense number of opinions, facts, or simply disinformation have been expressed, mainly of a political nature, that are not reinforced by the economic calculations. We will only take a look at the arguments of those against BTC that relate to the economic aspects of the project. The main one is the route's unprofitability, which BTC's opponents have tried to explain by the insufficient amount of oil in Azerbaijan to load it to full capacity. But this argument proved unjustified and was rejected after it was confirmed that recoverable reserves amounted to a minimum of approximately 700 million tons. This amount of oil ensures the economic viability of a separate infrastructure transportation project. What is more, a positive facture (with respect to attracting the necessary amounts of transportable oil) is that the ENI, Total, Philips, and Inpex companies have joined this project, which did not participate in AIOC, but belong to the Agip KCO consortium, which is developing Kashagan, the largest field in Kazakhstan. By purchasing 15% of the shares (with a planned throughput capacity of the BTC pipeline of 50 million tons a year), they dramatically increased their chances of pumping 7.5 million tons of Kazakh oil into this pipeline every year.

The next argument by the opponents of BTC is the high cost of constructing it, which means high prices are being set for pumping oil. The problem is that the tariff should be sufficiently high to bring in profit, on the one hand, thus ensuring that exploitation costs and payments to transit countries are covered and corresponding profit for the invested capital is received. While on the other hand, the tariffs for pumping oil should be sufficiently low to be of interest to the companies who own the oil. During detailed engineering of the project, its operation costs were determined at 2.95 billion dollars. Taking these expenses into account, an optimal tariff was set, which was fully acceptable to the oil companies and also made it possible to receive enough profit on the invested capital. Our calculations showed that the project's Internal Rate of Return (IRR) amounts to approximately 19% and it will be redeemed in no more than ten years of operation even at a discount rate of 10% and with annual operational and transit costs amounting to 5% of the capital investments. And at a rate of 24 dollars a ton, which the founders are also considering, the BTC pipeline will be recouped in six years, and the project's IRR will increase to 21.5%.

The BTC pipeline is criticized with particular severity by nongovernmental environmental protection organizations, which demand not only more transparency and environmental friendliness in the project (which cannot be disputed), but are also complaining about its economic aspect. In so doing, they are referring in particular to studies conducted by the James A. Baker III Institute for Public Policy, which, based on corresponding estimates, ascertain that the transportation of Caspian oil to Italian ports via the Baku-Supsa pipeline will be twice as cheap as via the Baku-Tbilisi-Ceyhan route.[9] A critical analysis of this undoubtedly in-depth and competent study is beyond the scope of this article. But it should be noted that significant changes occurred after it was published, which are not related to the publication itself. In particular, this work envisages that the throughput capacity of BTC does not exceed 40 million tons/year, and investments amount to 4.14 billion dollars. But at present, the projected capacity is calculated at 50 million tons/year, whereby investments need not exceed 2.95 billion dollars. The tariff proposed in

[9] See: "Predlozhenia NPO otnositel'no zaimov ili garantiynykh obiazatel'stv MFI po proektu BDT" (Proposals by NGOs regarding loans or guarantee obligations of the IMF for the BTC project), *Ekologia i prava cheloveka,* No. 791, 29 July, 2002.

the study for pumping oil via the Baku-Supsa pipeline ($3.65 per ton, with a capacity of 75 million tons/year and an operational cost of 1.6 billion dollars) also arouses skepticism. For transit payments to Azerbaijan and Georgia alone (not counting the cost of capital and operational expenses) are currently $3.2 per ton (see Table 4). Taking into account the aforesaid, it is obvious that the criticism of BTC by nongovernmental organizations, referring to these studies, is unjustified.

Nevertheless, the negative position taken by these NGOs was one of the reasons international financial institutions delayed opening a credit line for BTC. If they invest in this project using "free public funds," it will be possible to increase the quantity and improve the quality of public and social programs to be implemented during construction of the BTC pipeline. Otherwise, these programs will be the first to suffer since BTC will be built without the help of international financial institutions, and commercial banks, which rarely finance social programs, will naturally provide the necessary investments under market conditions. This will raise the interest rate on credit to a certain extent and will have a negative effect on the BTC's profitability. This will primarily affect Azerbaijan, in particular since it will need the appropriate guarantees in order to obtain foreign financing, which require high servicing costs that can most likely only be covered by profit on oil from the Baku share after the pipeline goes into operation. This could reduce the republic's overall revenue from operating the BTC pipeline, the benefits from which may be even higher if large-capacity tankers are used to ship the oil to consumers in different regions of the world.

Table 5

Transportation Costs when Exporting Caspian Oil to Different Regions of the World

Export to / *doll./ton*	Mediterranean	Northwest Europe	U.S.A. East	U.S.A. Gulf
Route				
Baku-Supsa* + Suez	**8.0**	**13.0**	**13.7**	**15.5**
Baku-Novorossiisk + Afra	**22.5**	**29.8**	**30.9**	**33.5**
CPC + Suez	**30.8**	**35.8**	**36.5**	**38.3**
Atyrau-Novorossiisk + Afra	**25.9**	**33.1**	**34.2**	**36.4**
Atyrau-Primorsk + Afra	**—**	**29.7**	**35.0**	**37.5**
Atyrau -Odessa + Afra	**27.4**	**34.6**	**35.7**	**38.3**
BTC + Vlcc	**21.0**	**22.4**	**23.9**	**24.9**
Aktau-BTC + Vlcc**	**26.0**	**27.4**	**28.9**	**29.9**

*—not including the cost of capital and operational expenses.

**—cost of delivering oil from Aktau to Baku is 5 doll./ton

An analysis of the data presented shows that the BTC pipeline along with Vlcc tankers is the cheapest way to ship oil to Europe and the U.S. (apart from the Baku-Supsa route, the tariffs for which do not include capital cost outlays and the pipeline's operational expenses and are used for exporting "early" oil from Azerbaijan). Whereby whereas the minimum profit on exporting oil to South European countries (compared with other routes) amounts to 1.5 doll./ton, more than 7 dollars a ton are saved when shipping oil to Northwest Europe and the U.S. The next route (in order of preference) for delivering oil

to the South European countries is via Novorossiisk, whereby both for Azeri oil (via the Baku-Novorossiisk route) and Kazakhstan oil (Atyrau-Novorossiisk). But this direction is significantly inferior to other routes when shipping oil to more distant regions: export to Northwest Europe via the Aktau-BTC and Atyrau-Primorsk pipelines, and export to the U.S. via the Aktau-BTC pipeline. Taking into account the aforesaid, the expediency of using the BTC pipeline is obvious not only for exporting Azeri oil, but also for extending this transportation system to the port of Aktau, that is, for delivering Kazakhstan oil to the foreign markets.

Astana declared its interest in the BTC pipeline as early as 1999 at the OSCE Istanbul Summit, and since the end of 2002 negotiations have been underway between SOCAR and KazMunayGaz, state companies of Azerbaijan and Kazakhstan, with the participation of potential investors on the development of a legal base for creating the Aktau-BTC oil transportation system. There are plans to draw up an intergovernmental agreement soon which should help to bring the legislation of the two countries into harmony with international agreements, ensure favorable conditions for attracting investments, as well as their safety, and create conditions for including companies working in Kazakhstan in the project.

The next stage will be drawing up a corresponding agreement between the transit country and investors. This document, which will be based on the conditions of an intergovernmental agreement, will set forth the obligations and rights of the sides, taxation questions, and access of exporting companies to the corresponding infrastructure of the two countries. In order to manage the Aktau-Baku transportation system, a Trans-Caspian Company could be created to include the four foreign companies in Kazakhstan that are already participating in building the BTC pipeline. What is more, there are reports that another two or three foreign oil companies, as well as KazMunayGaz, may join this project. Under the project to create the Trans-Caspian Company and form an Aktau-Baku corridor efforts are being made to determine the potential of the infrastructure in Kazakhstan and Azerbaijan.

It should be noted that the stages in development of the new transportation system are closely tied to the phases of developing the Kashagan field, where "early" oil is to be produced beginning in 2005 (5-7 million tons a year). It is expedient to use sea transport for shipping this amount since a corresponding infrastructure has already been created in the Caspian. But for volumes higher than 20 million tons, it would be expedient to lay a pipeline that will link Baku with Aktau along the seabed. There were also reports that the Agip KCO consortium, developing the Kashagan field, intends to increase investments and produce approximately 22 million tons of oil a year at the first stage, which is a significant argument in favor of building the underwater pipeline. Russia is traditionally against such a decision, basing its objections on environmental considerations and lobbying for the transit of "big" oil from the Kazakhstan shelf through its territory using export routes that pass through the ports in the Black and Baltic seas. Other alternatives are also being considered, including use of the Baku-Novorossiisk pipeline (partially) under reverse conditions or building a new one from Novorossiisk to the port of Supsa, with its subsequent extension to Ceyhan. But the prospects for implementing these projects have not yet been determined, although it can be noted that they are not only in Russia's but also in Georgia's interests, particularly if they help to settle the conflict in Abkhazia. On the whole, attracting Kazakhstan oil to the BTC pipeline would undoubtedly raise its economic efficiency, but this project is commercially viable even without this. What is more, it is of immense socioeconomic and political significance for the countries participating in it.

Economic Advantages of Implementing the BTC Project

The system of criteria, which reflects the economic advantages of the Baku-Tbilisi-Ceyhan oil pipeline, can be reduced to two aggregate indices that characterize the project's economy at the micro- and macroeconomic levels. The maximum net profit index (the difference between profit and expenses) re-

flects the direct economic effect for the state and companies at the microeconomic level, and the "economic investment multiplier" index is the size of the indirect (supplementary) economic effect for the country's socioeconomic development at the macro level.

The direct economic effect of the BTC pipeline for the state budgets forms throughout the entire time the pipeline is in operation from oil sales revenue (for Azerbaijan this amounts to 21-58 billion dollars, depending on the price of oil) and from transit (for Azerbaijan, Georgia, and Turkey, this constitutes 0.65, 0.75 and 1.5 billion dollars, respectively). At the same time, after the pipeline has been in operation for twenty years, SOCAR will receive 1.8 billion dollars as the company with a 25% share in the BTC pipeline, and the Botas Company will receive an average of 70 million dollars annually for operating its Turkish section.[10] If an alternative project is implemented, Azerbaijan will still have the mentioned benefits, but Georgia and Turkey will not.

Additional direct benefits from the Baku-Tbilisi-Ceyhan route will be created by reducing the transportation costs, whereby companies that participate in the BTC and AIOC, as well as state budgets, will be the beneficiaries. By reducing these expenses, AIOC will lower operational costs on the production and sale of oil, and correspondingly also the volume of oil required to reimburse them. This will increase the overall amount of profitable oil and, naturally, Azerbaijan's revenue from selling its share. What is more, the revenue of the AIOC and SOCAR members will grow (the latter has 10% of the shares in this consortium). On the whole, by reducing transportation costs, additional direct benefits from operating the BTC will amount on average to 200 to 600 million dollars a year, depending on comparable alternative routes and sales markets. In this way, since it is more attractive to investors, the BTC pipeline is also more efficient for the states participating in the project.

The indirect economic effect from implementing this project is characterized by the economic investment multiplier index, the mechanism for which consists of the following. The circulation of financial resources (investment and operational expenses) gives rise to solvent demand beyond the BTC for additional goods and services, that is essentially for new enterprises and industries, and this means new jobs will appear, as a result of which, the gross production output of attendant industries will increase. The people involved in this process will spend their wages on purchasing goods and services, thus stimulating the manufacture of consumer goods. Since the revenue of enterprises and the population is taxed, the state's tax revenue will also grow. The state in turn will spend the additional funds it receives, giving rise to new circulation of finances, goods, and services. Each cycle of incoming revenue makes an additional contribution to the overall economic and social effect of the project, and each increase in revenue spreads this effect throughout the economy.

The studies carried out for CPC and BTC showed that the value of the investment multiplier in the building and operation of oil transportation systems fluctuates from $1.5 to a little more than $3 (that is, each dollar of investment in these projects not only increases the country's GDP by the same amount, but also ensures 0.5-2 dollars of additional growth). The employment multiplier significantly (sometimes by ten-folds) exceeds the size of the GDP multiplier.[11] The effect of the employment multiplier is explained by the extremely low wages in the industries of indirect economic activity in the transit countries. As a result, the great expenses involved in implementing oil transportation projects can help to create a large number of relatively "cheap" jobs in industries of indirect (with respect to these projects) economic activity, and this means the employment of additional tens of thousands of people. In this way, the following conclusion can be drawn: as an effective source for attracting investments in the transportation infrastructure, as well as a tool for redistributing them in favor of attendant industries, the BTC project is initiating powerful multiplying effects and ensuring positive results for the entire economy, which is having an effect on the main socioeconomic indices of the member states.

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[10] BTC Project, Summary of Project Benefits, Oil and Gas Revenues, Supplementary Lenders Information Pack, April 2003 [www.caspiandevelopmentandexport.com.]

[11] See: A. Tvalchrelidze, *International Economic Projects in the Southern Caucasus and Trends of Sustainable Economic Development,* The Center for New Institutional Social Sciences, The International Research Workshop, 28 May-1 June, 2003, Washington University in St. Louis, St. Louis, Missouri, U.S.A.; A. Konoplianik, "Analiz effekta ot realizatsii neftegazovykh proektov SRP v Rossii dlia biudzhetov raznykh urovnei," *Neftianoe khoziaistvo,* No. 10, 2000.

Between January-June 2003, the increase in the GDP in Georgia amounted to 8.6% (5.4% for 2002), and the indices in construction increased to 46% (in annual terms). High growth rates in this industry are largely ensured by work on the BTC pipeline, although active implementation of the project did not begin until April. Since the percentage of the construction industry in Georgia's GDP structure is 5%, its contribution to an increase in the GDP amounts to 2.3%. A similar situation is also developing in investments—the percentage of investments in implementing this project in Georgia for the same period amounted to 45% of the volume of all investments in the country's non-financial assets. In the next two years, large investments will continue within the framework of capital spending on this pipeline, there are plans to spend approximately 520 million dollars on its Georgian section, including 225 million dollars on construction work, 120 million dollars on compensation to land owners, 90 million dollars to purchase pipes, and 85 million dollars on other capital costs,[12] which should maintain the positive trend in the growth of the country's main macroeconomic indices in the short term.

The indirect economic effect is largely temporary, since when construction is finished and the pipeline goes into operation, only the multiplication effect of annual operational costs will apply, which are much lower than the capital costs. A decrease in the indirect effects of implementing the BTC pipeline is particularly important for Georgia, where the direct effects for the state budget constitute an average of only 38 million dollars a year. And this is forcing the government to draw up corresponding measures for preventing a drop in the growth rate level achieved. In Azerbaijan, in contrast to Georgia, the negative effect of the decrease in indirect effects will be counterbalanced by intensifying the direct effects—high revenues for the oil industry and state budget from the sale of oil.

But Baku has another problem: how to avoid the consequences of the so-called "Dutch disease," when a successful raw material industry can disrupt the macroeconomic balance, and distort the national currency exchange rate, which will prevent investments from being attracted to other branches of the economy. The methods and ways to resolve this problem are well known from world practice, and Azerbaijan has already begun implementing them. In particular, in 1999, the State Oil Foundation was founded (along the lines of Norway), in which currency assignations are accumulated from all kinds of oil company activity: revenue from the sale of oil and gas, bonuses obtained from implementing production sharing agreements, taxes, and payments for oil transit through the republic's territory. Approximately 800 million dollars have already been accumulated in this foundation, part of which has been allotted to financing some of SOCAR's share in the pipeline.

Along with the states participating in the project, Western countries are also receiving significant economic benefits. The appearance of large amounts of Caspian oil in the Mediterranean Basin will cause an overall reduction in its price in South Europe and partially oust lower quality North and West African, and well as Russian crude oil, from the market. What is more, the U.S.'s dependence on the import of Middle Eastern oil will decline, since deliveries to the American continent of the West African grades displaced from Europe will increase, where some of the Caspian crude oil will also go that is not assimilated by the oil refineries in the Mediterranean states. The countries of Northwest Europe will also receive economic benefits, where some Russian and North African oil displaced from the Mediterranean Basin will be sent.

In this way, implementation of the BTC pipeline will help to form diversified and mutually replaceable sources of production, consumption, and transportation routes for Caspian energy resources. This will allow:

- producing countries (Azerbaijan and Kazakhstan) to ensure reliable and cheap export of their product, as well as gain access to alternative foreign consumption markets;
- major energy resource consumers (the countries of Europe and North America) to maintain a steady supply of oil on the world market, diversify the sources of its delivery, and decrease their dependence on individual countries or regions;

[12] See: *Georgian Economic Trends, GEPLAC*, No. 3, 2002, p. 10.

- transit states (Georgia and Turkey) to become the necessary link between the countries producing and consuming energy resources and to have an important international economic function, which will give them the opportunity for even greater integration into the world economy.