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Robert E. Ebel

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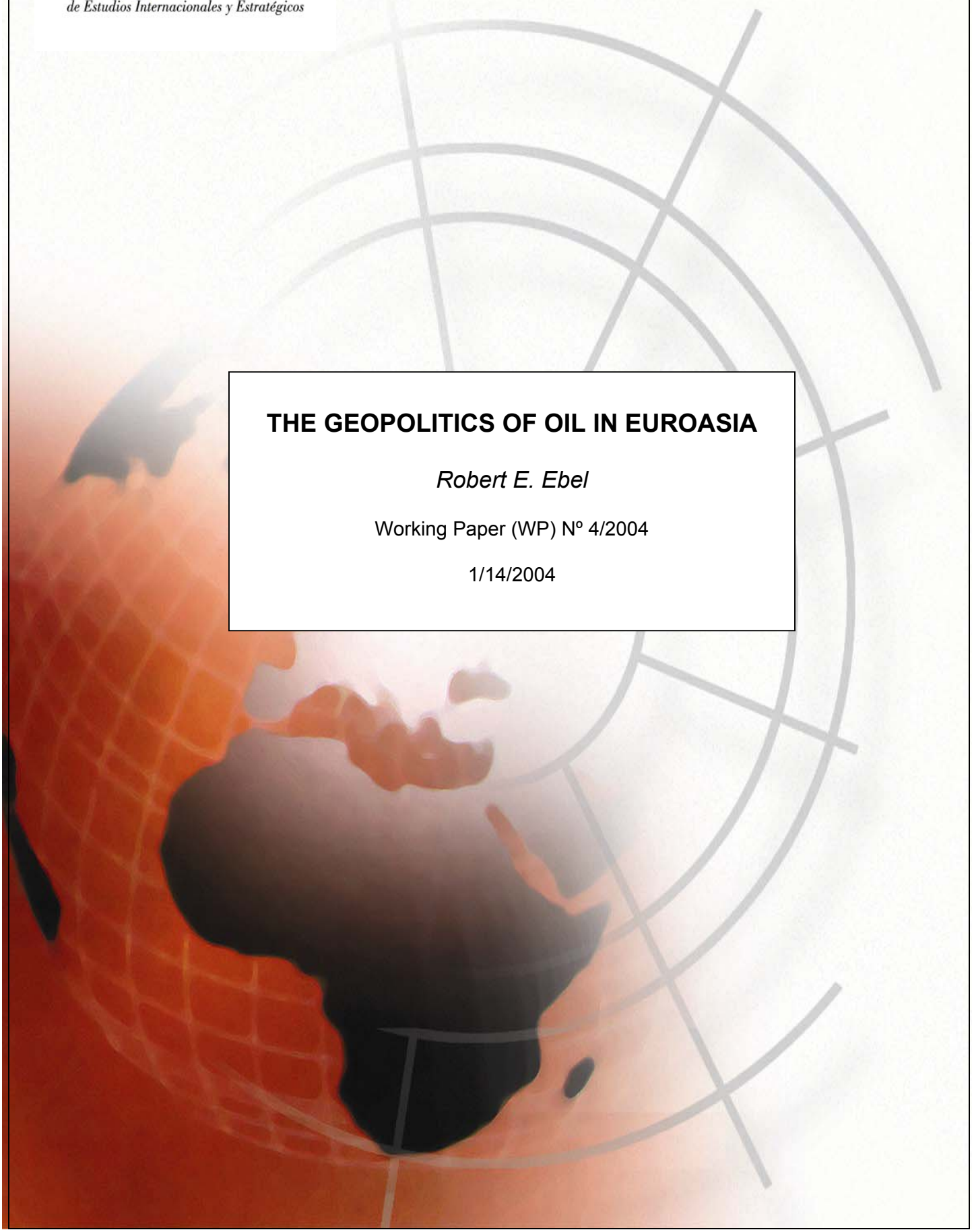

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The geopolitics of oil in Euroasia

Robert E. Ebel [*]

I. The Geopolitics of Oil

In today's context, national security and energy security are so closely intertwined that it is inconceivable to consider them as separate issues.

First, what do we mean by national security? I would suggest that the best answer, at least in my judgment, was provided a number of years ago by the eminent American diplomatist, George Kennan, who offered perhaps the least complicated definition: national security means 'the continued ability of this country to pursue its internal life without serious interference'.

What then is meant by energy security? For the American consumer, the answer is simple. He has only two concerns: price and availability. Little else matters, whether the oil consumed is imported or domestically produced is not of importance. It is very likely that these concerns hold for most consumers everywhere.

Importing governments, however, must take a different view and seek energy security –or security of supply– through diversity of supply, as well diversity among the kinds of fuels consumed.

Any oil- or gas-importing nation has limited choices when it comes to energy security. Countries import because domestic requirements exceed what can be produced domestically. The United States, for example, imports oil from some 60 different suppliers. Yet that measure of diversity is misleading, for it masks the importance of the Persian Gulf in particular and of the Organization of Petroleum Exporting Countries (OPEC) in general (1). The search for new supplies of oil outside the Persian Gulf continues, in attempts to maximize diversity among sources of supply, but a full substitute has yet to be found, and may never be.

Yes, supplies from Russia and from the Caspian Sea are increasingly important, as is expanding oil production in West Africa, and add to the diversity importers seek. Nonetheless, the future of oil is not defined by current production levels but rather by the measure of oil reserves, and that measure places the world oil future in the hands of the Persian Gulf.

Another element has recently been added to energy security concerns. In the past, consumers worried about supply disruptions, resultant high prices and the negative economic impact. Now, a new concern emerges from the employment by certain countries of income earned through oil exports in support of terrorist activities around the world and in efforts to obtain or develop weapons of mass destruction (2). The political and economic implications deriving from the use of oil income for such purposes far outweigh the generally transient high oil prices deriving from supply disruptions.

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[*] *Chairman, Energy Program*
Center for Strategic and International Studies
Washington, D.C.

With regard to these described vulnerabilities, no nation, whether exporter or importer, stands in isolation from the influence of the world market. All are vulnerable to any event, anywhere, any time, that would impact on either oil supply or demand.

Nonetheless, all are captured by the power of oil. Just what is that power?

• Oil fuels much more than automobiles and airplanes. Oil fuels military power, national treasuries and international politics.

• It is no longer a commodity to be bought and sold within the confines of traditional energy supply and demand balances.

• Oil is a determinant of well being, of national security and international power for those who possess this vital resource, and the converse for those who do not.

But there is a downside to oil as well. In addition to the resource curse that seems to affect most oil exporting countries, oil exposes the United States, an oil importer, to accusations of adhering to a double standard in its dealings with sources of foreign oil supplies. That is, it is seen as looking the other way regarding abrogation of civil rights, corruption and the like.

The Caspian Sea: Kazakhstan and Azerbaijan
With the opening of the Caspian Sea region to foreign investment, it was thought that at last the search for an alternative to the Persian Gulf was over. But it was not long before reality replaced hype. It is generally now thought that by 2010 the Caspian Sea might be providing 3% to 3.5% of world oil supply, not pivotal by any means but still important at the margin. Important because Caspian oil adds to the diversity of supply so vital to importing nations.

The two key Caspian oil producers are Kazakhstan and Azerbaijan. There is concern that these countries will fall victim to the so-called 'resource curse', as have so many oil exporters. Under this curse economies become overly dependent on oil-derived export income, diversification is ignored and they fall victim to reduced budgetary income when oil prices decline, as they eventually will. More importantly, corruption thrives and income is spent on the military, on pacifying the population and keeping those in power, in power.

Kazakhstan
Kazakhstan's presently known oil future rests with three fields: Tengiz, Karachaganak, possibly the world's largest gas condensate field, and offshore Kashagan, taken to be the largest oil discovery in the world in the past quarter of a century.

Crude oil and gas condensate production in Kazakhstan should exceed 1 million barrels per day (b/d) in 2003, marking the first time that level has been achieved. The growth pattern is to continue during 2004, as a production level of 1.16 million b/d has been planned. Domestic oil requirements in Kazakhstan are minimal, and virtually all of the incremental barrel becomes available for export. As a result, crude oil exports alone should average 1 million b/d in 2004.

Growth in production in Kazakhstan should continue at least to the middle of the next decade, with output reaching a projected 2.4 million b/d by 2010 and as much as 3.6 million b/d by 2015, of which 2 million b/d will come from the Kazakh sector of the Caspian Sea. Nonetheless, foreign oil companies are somewhat dubious about these future oil production goals. Unjustified restrictions on investment, a penchant for revising agreements, the need for greater clarity regarding those legislative provisions pertaining to offshore operations all combine to enforce that doubt.

Karachaganak will likely peak at around 240,000 b/d, and Tengiz may hit 640,000 b/d by 2010, probably close to its peak.

Kashagan, if the operating consortium has its say, may not begin to flow until late 2006 or early 2007, although President Nazarbayev will pressure the companies to begin much earlier (3). At its peak, Kashagan is expected to provide up to 1.2 million b/d, possibly as early as 2015 (4), if delays do not interfere and if export pipeline capacity matches scheduled growth in production.

Kazakh domestic demand is not expected to increase substantially during the coming years. In the years ahead as much as 90% of production could well become available for export. On that basis then, Kazakhstan might have an exportable surplus of at least 2 million b/d in 2010 and possibly in excess of 3 million b/d by 2015.

But, the time will arrive, and comparatively soon, when additional export pipeline capacity will be required, if the oil production –and therefore export– goals are to be reached. The Caspian Pipeline Consortium, known more broadly as the CPC pipeline, is currently handling about 320,000 b/d, with five pumping stations operating (5). The capacity of the pipeline, with all 15 pumping stations in place, will be 1.34 million b/d, sufficient to handle all production from Tengiz and Karachaganak, but as Kashagan comes on, another export pipeline will be required.

Kazakh oil also moves northward into Russia via the Atyrau-Samara pipeline that has a current maximum capacity of 300,000 b/d. Shipments during 2003 have averaged slightly more than 280,000 b/d. Kazakhstan, as it seeks additional pipeline access, wants to double the capacity of that line to 600,000 b/d.

Additionally, Kazakhstan has been eyeing the Chinese oil market and seems intent on gaining access by constructing a pipeline from the oil fields of western Kazakhstan to western China (6). President Nazarbayev has noted that China had now 'totally guaranteed' the US$800 million required to finance the pipeline and that construction would begin in July 2004 and be completed in 2005 (7). Initially the pipeline will carry crude oil from a field –North Buzachi– recently acquired by the Chinese National Petroleum Company (8). But contributions from other fields ultimately will be required. Additionally, Kazakhstan has concluded that by the year 2009 a second pipeline to China would be necessary. Will Kazakhstan have sufficient exportable crude oil to supply all the pipelines it has been planning? The answer is not yet evident, but clearly new discoveries will be required.

It all comes down to the issue that if the Kazakh oil sector is to grow, it must be able to export, and to be able to export means sufficient export pipeline capacity. Any market will do for Kazakhstan, it seems, north, south, east, or west. It does not matter.
Kazakhstan has set up a National Fund as it attempts to defeat the resource curse. But, like most other oil exporting countries, does it have the necessary commitment to transparency, fairness and good governance? Will civil society be sufficiently engaged in the oversight process, and can the government resist pressure to limit the spending of those monies allocated to the National Fund? Finally, will the government work at developing a diversified economy or will the unavoidable attraction of using the Fund's assets to the benefit of the oil and gas sector undermine such efforts? The answers to these questions will go far in defining Kazakhstan's future.

Azerbaijan
Azerbaijan is not a major player on the world oil market. Oil output in 2003 will barely exceed 300,000 b/d. All growth is coming from just one offshore project –development of

the Azeri-Chirag-Guneshli (ACG) block by the Azerbaijan International Operating Company (AIOC). Onshore fields are either in decline or barely holding output constant.
Much like Russia and Kazakhstan, domestic oil requirements are relatively limited. Azerbaijan today exports about 180,000 b/d annually, of which 50,000 b/d is provided by the State Oil Company of Azerbaijan. All of the production attributed to the AIOC is exported and will continue to be exported. At present AIOC oil is transported from Baku by pipeline to the Black Sea port of Supsa. A new pipeline, extending from Baku through Georgia to the Turkish port of Ceyhan on the Mediterranean, is under construction and is scheduled to be operational by April 2005. Its design carrying capacity will be able to accommodate future AIOC production levels.

The ACG fields represent the future of Azeri oil, and should hit their peak of 1 million b/d during 2008 to 2009, all of which should be exported (9). Prospects for further major oil discoveries offshore appear rather bleak, based on experience to date. Unfortunately, the southern Caspian appears gas prone.

The political future of Azerbaijan appears less clear than its oil future. First, Ilham Aliyev recently succeeded his father Geidar Aliyev as president, setting up the prospect of a dynasty perhaps to be emulated by other countries in the Caspian region. Observers are concerned that Ilham Aliyev lacks the political skills of his father and may not be able to offer the secure and attractive investment climate essential for foreign oil companies.

Secondly, the oil wealth of Azerbaijan is not forever. Based on presently known reserves, oil production might be expected to level off, then begin a slow decline, by the middle of the next decade. What then for the country? Thirdly, how will the oil-derived income be spent? Will it be wasted, as so many oil exporting countries have done? Or, can lessons learned from the mistakes of others be put to work in Azerbaijan? Accountability, transparency and public oversight must be introduced and put to work, lest Azerbaijan fall victim to the resource curse.

Azerbaijan has established a state oil fund but its missions and objectives must be clarified, an expenditure policy adopted, its accountability improved and the role of parliament in oversight should be increased (10). There is a State Oil Fund supervisory council but it must be given independence and real powers of oversight if the desired accountability and transparency is to be achieved.

II. Russia Today

Russia has reclaimed the position as the leading oil producer in the world, at 8.8 million b/d (October 2003 reported output), having surpassed Saudi Arabia. Russia had lost that position in mid-1988, when production began its long collapse, fostered by oil reservoir mismanagement and by the lack of investment capital. Saudi Arabia has helped Russia regain this position by cutting its own oil production in accord with an OPEC decision to support oil prices by reducing supply. Saudi Arabia had hoped that Russia would take comparable action but Russia has made it clear that it thinks oil prices are too high and thus will not reduce exports. Further Russian oil output growth, coupled with continued Saudi cutbacks, will solidify Russia's leadership, temporarily at least, until Saudi Arabia decides that protecting oil market share, rather than oil market price, better serves its national interests.

Russian oil exports have been expanding rapidly, roughly in concert with production, placing Russia second only to Saudi Arabia in this regard, and may average some 6 million b/d during 2003 out of an oil production of 8.4 million b/d. Russian oil demand has been relatively stable, the country is depopulating, and thus most of the incremental barrels become available for export.

Russia, as do all oil traders, invoices in US dollars. Interestingly, the European Union has been trying to persuade Russia to fix some of its export contracts in euros. Russia has politely listened but is unlikely to price its oil in euros. Global trade in commodities is based largely on the US dollar and that is unlikely to change.

Russian Oil Potential
There are two guidelines we can draw upon in our attempts to judge future Russian oil production and export levels.

First, we can look to the recent government-approved national energy strategy that takes the country out to the year 2020. Two scenarios have been set out, an optimistic case and a moderate case. Looking at the optimistic case for 2010, we find that production hits about 9.8 million b/d, with exports coming in at under 5.6 million b/d. The moderate case has production slightly exceeding 8.9 million b/d, and exports just under 5 million b/d. Exports for both cases relate only to crude oil, and do not include petroleum products.

The optimistic case for the year 2020 shows minimal growth during the decade for both production and exports and does not return Russia to its peak of 11.4 million b/d in 1988.
The second guideline, and the one I prefer, comes from an internal study carried out by Yukos, now the leading producer in Russia.

Yukos, in its study, also projected production out to the year 2020, and found that:

• oil production will peak by the year 2010, somewhat exceeding 10 million b/d,
• holding at that level out to the year 2015,
• then a very slow decline sets in,
• dropping production to just below 10 million b/d by the year 2020.

The two leading oil producing regions –West Siberia and the Urals-Volga– will both peak in 2010, as will Timan-Pechora.

Given that, where will the growth come from?

• East Siberia, which produced only 40,000 b/d in 2001, is to expand to 1.34 million b/d by 2020. Beyond 2010, all the growth is to be provided by undiscovered fields.

• The Russian Shelf, also having produced just 40,000 b/d in 2001, will also be producing in excess of 1.3 million b/d by 2020. All of the growth beyond 2015 is to be provided by undiscovered fields.

• Without these two regions, Russian oil production would be around 7 million b/d by 2020.

Crude oil exports are likely to expand as production expands but, given that refining capacity is not likely to be measurably enlarged, petroleum product exports could be expected to decline.

Accepting either of these guidelines tells us the current decade is a decade of growth, but that the next decade is part constancy, part slow decline.

Whether Russia should be able to maintain growth in crude oil production and oil exports in turn is questionable. The oil industry of Russia, while far more transparent than during Soviet days, is still not very forthcoming in providing the kind of information needed to make reasoned judgments for the future. However, most Russian oil companies appear to be focused on maximizing yields from existing fields, while allocating only relatively small

amounts of capital to exploration drilling. Annual additions to oil reserves over the years have not offset the volumes produced. In other words, the companies would appear to be sacrificing the future for the present (11). Continued absence of emphasis on finding and developing new oil fields will ultimately bring the days of rapid growth to an end.

Markets and Pipelines
The Russian oil future, as it is seen today, very much depends on the construction of three major export pipelines. Without these pipelines, exports cannot expand, and in turn national production would be forced to mark time, given that domestic oil consumption is expected to rise only marginally.

These three pipelines are:

• To the Arctic port of Murmansk, aimed specifically at the US market.
• From Angarsk, in Eastern Siberia, to Daqing, in China.
• Also from Angarsk, to the Pacific Ocean port of Nakhodka, aimed specifically at the Japanese market, although it could also serve the whole of the Far East and Southeast Asia as well.

There is another oil export pipeline to be considered, one that is much lower in profile and does not attract the level of attention given the others. And that is a 24-inch, 800-kilometre pipeline to transport oil from the northern reaches of Sakhkalin Island to the southern tip of the island, at which point tankers can serve not just Japan but China and the Far East in general.

All three pipelines exploit the unreliability of Middle East oil and play up Russia as a far more secure source of supply. But then, it should be stressed that the availability of these export pipelines is just as important, if perhaps not more so, to the future of the Russian oil sector as is the volume of oil these pipelines would make available to the world market.

But each faces its own set of complications (12). For the pipeline to Murmansk, for example, will the line be built by private capital, thus taking it out from under the control of Transneft, the Russian oil pipeline monopoly? Moreover, US east coast refineries would have to be reconfigured to handle higher-sulphur Russian crude. Would the refinery owners be prepared to make the required capital investments just to be able to refine Russian crude?

III. Oil Demand Expectations

Against the background of two key sources of new supplies –Russia and the Caspian– then where, among the developing countries of the world, will growth in oil demand be concentrated? It is expected that China, South Korea and India will lead the way. There is a common thread running through these three countries: rising energy consumption, particularly of oil, paralleled by a growing reliance on imports to satisfy demand.

China
China today is the key driver in the growing world demand for oil, accounting for fully one-third of the growth anticipated for the year 2003 and only slightly less during 2004. Clearly, China must have access to adequate and timely supplies of crude oil and natural gas if it is to successfully sustain economic growth. To do so, it must compete in a world market where supplies are not always available in the amounts desired nor at prices acceptable to the consuming population.

China's appetite is not limited to just oil. Today it is the world's largest consumer of steel and copper, and next year it will be the largest consumer of aluminium, all marks of a rapidly expanding economy.

China's oil consumption may average some 5.4 million b/d during 2003, rising to 5.7 million b/d during 2004, defining China as second only to the United States in terms of oil use. With domestic oil production declining, with little or no current prospect for new supplies emerging, oil imports must not only cover growing demand but offset these declines as well. Consequently, oil imports have been rising rapidly and now average around 2 million b/d (13).

Most observers accept that China's appetite for oil, including imported oil, will continue (14). For example, the Energy Information Administration, under the US Department of Energy, projects China's oil demand to reach 9.4 million b/d by the year 2020, with net imports –China still exports small volumes to Japan– of 5.9 million b/d, thus making China a key player in the world oil market.

Having said that, two questions emerge. First, is the Chinese economy in danger of becoming overheated, to the extent that economic growth visibly slows down and so does the demand for oil? Secondly, little attention has been given to the prospect of possible future discoveries of crude oil in volumes sufficiently significant to make a difference. Are the geological prospects so limited as to sharply limit that prospect?

China, like all importing nations, seeks diversity among suppliers and diversity amongst fuels consumed, with emphasis today on oil and natural gas, although domestically produced coal is still by far the dominant fuel (15).

At present virtually all the oil imported by China arrives by tanker, with very small volumes arriving by rail from Russia. Importantly, there are no pipeline deliveries. That adds to China's vulnerability, in that crude oil moving from the Persian Gulf to China passes across the Indian Ocean, through the Straits of Malacca and across the South China Sea, a long journey subject among other things to piracy in the Straits.

Moreover, China sees vulnerability also extending to its dependence on foreign oil tankers employed to deliver oil to its ports of import. As a result, the government is looking into the prospect of China creating its own oil tanker fleet. In sum, China's national interests would be served if diversity in means of oil deliveries could be secured.

Vulnerability is not limited just to volumes imported nor to the means of delivery. Rather, true vulnerability may be found in the prices paid for imported oil and, moreover, in the volatility of these prices. Will the Chinese economy be strong enough to absorb the impact of such volatility?

When the United States looks north, we see Canada, our leading source of imported oil and also the supplier of one-sixth of all the natural gas we consume. When China looks north, it sees Russia, rich in oil and natural gas but found in fields far distant, in western and eastern Siberia and the Arctic.

Of these regions, eastern Siberia is far more attractive as a source of oil and gas for China, in that it is much closer to points of consumption in China. This region has a recognized natural resource potential which has not been realized in the absence of both a domestic and an export market. Now, the prospect of development, based on exports to China and elsewhere, has emerged.

Just as importing nations seek security of supply through diversity of supply, exporting nations seek security for their oil sales through market diversity. That is a driver behind a proposal by Yukos, Russia's largest oil company, to export oil to China via a pipeline originating at Angarsk, in eastern Siberia.

But diversity of markets is not the only driver, nor is it the most important one. Rather, Yukos and the Russian oil sector as a whole need new export markets if production and oil-derived income are to expand. China, the Far East and South-East Asia are the growth oil markets of the future, providing the justification for construction of new pipelines to move Russian oil eastward. At present, all Russian oil –and gas– exports move westwards.

Diversity among the kinds of fuel consumed can be seen as perhaps just as important as diversity among sources of oil supply. To that end China is contracting to import very substantial volumes of liquefied natural gas (LNG), especially from Australia, as well as considering the prospect of importing natural gas from the Kovykta field in eastern Siberia. But, the economics of that particular project have been questioned, given that the delivered cost of the natural gas may not be competitive with LNG, for which liquefaction, transport and regasification costs have declined substantially in recent years.

Having said that, a political and economic conflict has arisen for Russia. Russia is also considering construction of a 1 million b/d oil export pipeline to the Pacific Ocean port of Nakhodka, to serve the needs of Japan, with a branch line to China. This proposal comes from Transneft, the Russian oil pipeline monopoly.

Importantly, a pipeline to Nakhodka is viewed by Russian officials as providing the base for the economic development of eastern Siberia and the Russian Far East. The population of the Far East has been declining over the past decade, from 8 million to just 6.7 million, largely because of a rising mortality rate and emigration (16). Some means to encourage economic development and immigration must be found, and officials hope that oil and gas pipelines will provide those means.

Thus, Russia has much at stake in its ongoing negotiations with China and Japan, with both future oil sector growth and regional economic development very much dependent on the outcome of these negotiations.

However, the oil reserve base in eastern Siberia is far too small at present to justify construction of an oil pipeline from Angarsk to Nakhodka, whereas Yukos has given assurances that it can provide 600,000 barrels per day by pipeline to China without any constraints.

Both China and Japan are pressing Russia for a decision to the question: which of these two pipelines is going to be built first? (17) How can Russia play both of these proposals, seeking the maximum political and economic gain, without alienating either the Chinese or the Japanese? Now, the issue has been further clouded by the arrest, then resignation, of Yukos' president Mikhail Khodorkovsky.

Given that Yukos is the driver behind plans to build an oil pipeline from Angarsk to Daqing, might the mounting tensions between the Russian government and Yukos interfere with these plans? President Putin has endeavoured to calm Chinese fears by noting that no matter which route is chosen, crude oil exports to China will increase, presumably having in mind larger volumes arriving by rail. Rail shipments of oil to China are to average 90,000 b/d in 2003, then 110,000 b/d in 2004, expanding further to 170,000 b/d in 2006, with the possibility of 300,000 b/d being delivered in 2006.

Rail deliveries of Russian oil to China, while not inconsequential, nonetheless are likely to be more costly than delivery by pipeline. But there is a message in these deliveries. And that is, Russia can be relied upon to help China, to the extent it can, until an oil export pipeline is in place, in meeting the growing domestic demand for oil while giving China the diversity of supply it seeks.

Nonetheless, there is a larger question in all this. That is, would pipelines linking Russia with China serve US national interests? At first glance, the answer would appear to be yes, it would. Reducing Chinese dependence on Persian Gulf oil, today the largest source of its oil imports, has to be seen as in US national interests, and in the interests of the world oil market as a whole. Another competitor for Persian Gulf oil, while useful to the exporting countries, complicates matters for other importers, by bringing to the table a set of national interests that may not always coincide with the national interests of those who historically have been dependent on the Gulf.

But of course there is a trade-off, as trade-offs accompany any and all energy-related decisions we make, either as a nation or as individuals, and they carry their own risks and costs.

These pipelines, if and when built, will bring about a closer political and economic integration between Russia and China. Moreover, pipelines carrying natural gas from Russian east Siberia –discussions in this regard are not very advanced– might not only supply the Chinese market, but would possibly be extended beyond China to South Korea, providing reliable fuel supplies that would support development and ease strains on its economy.

Yet, this prospective economic integration could eventually evolve into a regional political bloc, excluding the United States, and would in part solidify Russia's future place in the region. Once again, however, would the trade-off meet our national interests, or would it complicate them?

The Central Asian states of Kazakhstan and Turkmenistan are also considering the prospect of exporting oil (Kazakhstan) and natural gas (Turkmenistan) by pipeline to China. At present two factors work against this prospect: geography and exportable surpluses. Distances between the points of production and the points of consumption, although not insurmountable, raise delivered costs and could only be offset if pipelines from Kazakhstan and Turkmenistan were to be linked to Chinese pipelines originating in the western portion of the country. Secondly, exportable surpluses of Kazakh crude oil and Turkmen natural gas are presently committed elsewhere and major new sources of uncommitted supplies would have to be developed for export to China.

Like any seller of goods, it is in Russia's interest to encourage competition among the prospective buyers of the energy it has to sell. At the same time, competition, say, between China and Japan, must not be allowed to deteriorate into a rivalry. Japan is almost wholly dependent on imported oil while China, now second only to the United States in terms of oil consumption, is moving gradually to an oil import dependency that in the years ahead may well match the current level of relative US dependency.

Having been an oil importer now for a number of years, and sensitive to the workings of the market place, would China conduct itself responsibly, or would it employ political leverage to secure needed supplies? Whatever its response, it would very much matter to the United States and to other importers.

Current Chinese dependence on Persian Gulf oil comes to mind. If China is not especially successful in reducing its dependence on that region, through investments in other oil

exporting countries, as seems to be its current programme, or through pipeline linkages to Russia, and should Persian Gulf supply be interrupted for political reasons, could China be expected to react in concert with other importers, or might it seek separate arrangements to cover whatever losses in supply might occur?

The number of unanswered questions reflects the difficulty of meaningful assessments of China's future conduct in the world of oil. These questions are easy to come by, because of past experiences in dealing with the world oil market and interruptions in supply. We know where the pitfalls are, sometimes having learned the hard way. But China is a relatively new boy on the block and has yet to face the realities of protecting an economy that is steadily increasing its dependency on an adequate, timely and secure supply of oil.

Yet the country is a major participant in the global trading system, and there is reason to believe that it will take a more active, a more responsible role in keeping with its energy vulnerability.

South Korea
South Korea is the fourth largest oil importer in the world and the second largest importer of liquefied natural gas (LNG). Oil consumption averaged about 2.3 million b/d in 2002 and is expected to reach 3 million b/d by 2020, expanding at a much lower rate in the future than in the past, in part because of a demand saturation in the transport sector.

But South Korea has neither crude oil nor natural gas of its own, making it fully dependent on the continued availability of imports and underscoring the vulnerability of the economy to any disruption in deliveries.

Seeking security of supply through diversity of supply as well as diversity in means of supply, South Korea is prepared to import natural gas from fields yet to be developed in Russian eastern Siberia. The proposed pipeline, originating at the Kovykta natural gas field, located to the west and north of Lake Baikal, would first provide 20 billion cubic metres annually to China, then bypass North Korea by going offshore (18) and then returning onshore to provide 10 billion cubic metres to South Korea. The feasibility of the pipeline has been approved and efforts now turn to negotiations regarding natural gas pricing, financing and technical schemes (19). It is anticipated that initial volumes could flow to China and South Korea as early as 2008.

But, just as for China, can the cost of natural gas from Kovykta transported by pipeline to South Korea compete with the landed cost of LNG? That would appear questionable, unless pipeline costs can be substantially reduced (20). Additionally, will future growth in demand for natural gas justify both sources of supply? At the same time, diversity of supply and of the means of transport, plus concern for a cleaner environment, are in the national interests of the country and that importance in helping shape the final decision cannot be ignored.

India
It is thought that India will have one of the fastest growing economies in the world during this decade and next. That growth in turn translates into an increasingly higher demand for fuel, especially oil and natural gas. India required about 2.1 million b/d of oil during 2002, of which some two-thirds were imported. By the year 2020 the demand for oil might reach 4.9 million b/d. Although India is taking steps to limit its reliance on imported oil by stepping up domestic exploration and production, any meaningful reduction appears questionable.

At the same time, India is the third-largest producer of coal in the world, and coal covers more than one-half the total energy needs of the country. Offsetting this advantage is the

expansion in consumption of natural gas, rising more rapidly than any other fuel. In the not too distant future India will have to begin importing much of its natural gas needs, either by pipeline (21) or as LNG, further adding to its import vulnerability.

IV. Japan

Japan, once characterized as the tiger of the Far East, has slowed down. Demand for petroleum products declined in the year 2000, with the decline continuing in 2001 and again in 2002. As noted above, Chinese oil requirements now exceed Japan's. A slight growth is expected for 2003, in large part because of the country's nuclear power crisis. Nonetheless, Japan is a depopulating and aging country, oriented towards service industries, and the downward trend in oil use should not come as a surprise.

A large number of nuclear reactors, 21 in all, were shut down for safety reasons, beginning in 2002, as a result of which the burning of coal, oil and natural gas in electric power generation rose measurably. But the oil demand decline is expected to resume in 2004 and oil demand by the end of the present decade is assumed to be less than in 2003.

Japan is almost wholly dependent on imports to satisfy its requirements for oil and natural gas, with 88% of its crude oil imports coming out of the Middle East, with the United Arab Emirates, Saudi Arabia and Iran the leading sources. Japan has attempted to develop sources of equity oil around the world, but has met with very limited success. Most recently, Japan had negotiated an arrangement with Iran to develop the Azadegan oil field, one of the largest in the country, with proven reserves believed to be about 2.6 billion barrels (22). But the United States intervened and asked that Japan cancel the deal, for it continues to object to any agreements that would be to the political and economic benefit of Iran.

Because there are no pipelines linking this island with sources of supply, all of the imported natural gas must be delivered as liquefied natural gas (LNG), making Japan the world's largest importer of natural gas in this form.

That might change, however, if plans to supply natural gas from Sakhalin Island (Russia) to Japan by pipeline are carried out.

V. Business as Usual

Virtually all interested organizations, private and public, who prepare forecasts on future levels of energy production and consumption would seem to agree on the following message. This message, while simple, holds tremendous political and financial implications for the coming years:

It is perhaps ironic that in an age where the pace of technological change is almost overwhelming, the world will remain dependent, for this decade and the next, on essentially the same forms of energy –oil, coal and natural gas– that fuelled the 20th Century.

This message is accompanied by the finding that by the year 2020 if not earlier, the consumption of energy by the developing countries of the world will surpass energy consumption by the industrialized world, driven in part by changes in population. Population in the developed world is shrinking, while population in the developing countries, led by China and India, is expanding. Moreover, much of the energy fuelling world consumption is likely to originate in the developing world.

Current world oil demand is on the order of 77 million barrels per day. The International Energy Agency has forecast world oil demand approaching 119 million barrels per day by 2020. Can we, or should we, safely assume that oil supply will match demand, or might competition for available supplies heighten, leading to higher prices and strains in political relations?

These judgments and considerations do not make for a necessarily comfortable and secure future. In sum, it will be 'business as usual' for this decade and the next, defined by supply disruptions and price volatility which will very likely be comparable in scope to those of the past two decades.

Robert E. Ebel
Chairman, Energy Program
Center for Strategic and International Studies
Washington, D.C.

NOTES:

(1) OPEC member-countries accounted for about 42% of total US oil imports during the first five months of 2003. Persian Gulf suppliers accounted for about 21% or one-half of the OPEC total. Most Americans, if asked what country is the leading foreign supplier of oil to our market would probably answer, 'Saudi Arabia'. But it is not Saudi Arabia, it is Canada. Canada provides roughly one-sixth of the crude oil and petroleum products imported by the United States.
(2) Others take a broader perspective, pointing out that threats to our security in general, and to oil security in particular, arise from a broader set of 'development-related' issues such as political governance structure, lack of transparency and public participation, and religious fundamentalism. See *Oil and Security, Executive Session*, *May 14, 2003*, a Rapporteur's Report released by the Environment and Natural Resources Program, Belfer Center for Science and International Affairs, Harvard University, John F. Kennedy School of Government. It was also noted that patterns of oil use worldwide indicate an increasing shift towards the transport sector. This sector is the least flexible part of oil demand, and thus future vulnerability may increase rather than decrease.
(3) Contractors are discussing this delay with Kazakh officials and the level of compensation to be paid by the contractors to the government. See *Interfax Central Asia*, November 21, 2003.
(4) Production at Kashagan will grow in stages. Stage one calls for 440,000 b/d, stage two for 900,000 b/d, and stage three for up to 1.2 million b/d.
(5) The CPC handles oil not just from Tengiz but from a variety of fields, including liquids from Karachaganak.
(6) Efforts appear to have been stepped up in the wake of difficulties faced by Yukos and its president, Mikhkail Khodorkovsky. Yukos is the driving force behind the proposal to build a crude oil pipeline from Angarsk to Daqing, China. Kazakhkstan may be playing to Chinese fears that this particular pipeline at best might be considerably delayed, if not cancelled.
(7) *The Wall Street Journal*, November 21, 2003.
(8) North Buzachi currently produces about 8,400 b/d, according to *Platts Oilgram News* (October 21, 2003).
(9) More recent reporting (*Azertas*, November 19, 2003) presented a forecast of AIOC production from 2003 through 2007. This forecast showed AIOC production gradually increasing from 132,000 b/d in 2003 to 134,000 b/d in 2004, further to 240,000 b/d in 2005, 426,000 b/d in 2006 and 440,000 b/d by the year 2007. It would thus appear that a production level of 1 million b/d to be reached by 2008 or 2009 would be out of the question.
(10) See *Caspian Oil Windfalls: Who Will Benefit?,* a Caspian Revenue Watch report and a publication of the Central Eurasia Project of the Open Society Institute.
(11) The chief financial officer of Yukos, Bruce Misamore, was very clear as to his philosophy when he stated that 'My approach is to make cash quick and generate dividends to maximize return on investment… maybe that's heartless, but its at the center of what we do'. The senior vice president of Lukoil, Leonid Fedun, added that 'All other companies are using fields developed in the Soviet period and have not invested

in expanding their reserve base which they will have to do in five to seven years'. See *Financial Times*, November 19, 2003.
(12) The projected pipelines to Daqing and to Nakhodka are discussed in detail below.
(13) One-sixth of the crude oil imported by China during January-September 2003 originated from Saudi Arabia. For comparison, about 20% of the crude oil imported by the United States comes from Saudi Arabia.
(14) China is worried about its growing reliance on foreign oil and is taking steps to impose minimum economy standards on new automobiles as one approach to containing the growth in oil demand. The rules will be significantly more stringent than those in the United States, according to Chinese experts involved in drafting these rules (See *The New York Times*, November 18, 2003). The Chinese standards in general call for new cars, vans and SUVs to get as much as two miles per gallon more in 2005 than the average required in the United States, and about five miles more in 2008. Estimates place the number of automobiles in China rising from around 20 million in 2002 to 30 million in 2005. But there is a downside to the expanding role of the automobile in China. It has been reported (*Wall Street Journal*, November 20, 2003) that deaths on the roads of China during 2003 approached 110,000 in number and that vehicle smog has replaced industrial grime as a source of dangerous pollution in many big cities.
(15) China leads the world in terms of production and consumption of coal.
(16) *Rosbalt News Agency*, November 13, 2003.
(17) Russian sources indicate that the final decision will be made by President Putin. Putin has indicated that the decision will reflect national interests. That is, development of eastern Siberia and the Far East, as well as how best to respond to environmental concerns. See *Alexander's Gas & Oil Connections*, volume 8, issue #22, November 13, 2003.
(18) There is no viable commercial market for imported natural gas in North Korea.
(19) *Platts Oilgram News*, November 17, 2003.
(20) The cost of building a 4,900-kilometre pipeline from Kovykta to China and South Korea has been placed at US$17.6 billion.
(21) Several prospective suppliers have shown interest in exporting natural gas to India by pipeline. One plan envisages moving natural gas from Turkmenistan across Afghanistan and Pakistan to India. Iran has also considered piping natural gas by transiting Pakistan to markets in India. Both plans remain on paper, in considerable part because of the uncertain political relations between Pakistan and India. Prospective buyers in India might not want to risk disruption in deliveries should relations between Pakistan and India deteriorate.
(22) *The Washington Times*, October 17, 2003.