STRATEGISING ENERGY

AN ASIAN PERSPECTIVE

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Editor

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Few topics are more susceptible to heated public debate than the risks associated with the energy sector and energy security. Environmentalists make a case for the threats derived from, in particular, the use and transportation of oil and gas, while economists insist on the need for suitable pricing strategies on energy supplies so that demand may be fulfilled. Meanwhile, political scientists from government and academic institutions vigorously debate the threats inherent in being dependent on imported energy from politically suspect producer and transit states, while political leaders of all hues argue their own cases, treating the energy industry either as a scapegoat for society's failure in increasing energy efficiency and reducing energy consumption, or as a convenient source of taxation, revenues, and international standing.

Public debate on energy issues is often made yet more convoluted by the fact that political scientists from government and think-tanks not only have a different outlook and employ different analytical methods than industry analysts, but often indeed prefer to discuss with each other rather than with representatives of the industry.

Why is this so? A nation's energy policy, whether put in writing or not, typically derives from the often conflicting needs of the industry and the state's political leadership. Much depends on which of the two is able to dominate the other. In the United States, the industry has often been able to promote its particular interests through the use of

lobbyists. In Iran, on the other hand, the various state actors can easily dominate the industry and indeed use it for their own purposes. Other countries tend to fall somewhere in-between these two extreme models. The extent to which a given country can be said to utilise strategies of energy and security really depends on the extent to which its state actors are able to dominate its industry, through the use of monopolistic state companies or legislation and regulatory means. Naturally, industrial companies too employ strategies, to gain a dominant position on the market or to achieve other goals. Yet, it is by no means certain that the strategies of the state and its industrial companies work in tandem. The often conflicting needs and priorities of the industry and the state's political leadership frequently cause tensions, in addition to those caused by foreign policy initiatives.

The interest conflict between the state and its industries is not the result of a Manichaean struggle between opposing forces of good and evil, even though some fringe politicians may characterise it as such. Rather, the needs of the industry and the state are often seen as conflicting because the two have a:

- different outlook (infrastructure vs. politics);
- different analytical methods (business economics and technology vs. political economy and political science); and
- different interests (profit vs. societal reconstruction).

For sure, the global energy scene is not a purely business environment. Energy is not decoupled from international politics and geostrategy. Politics and in particular geopolitics introduce distortions in business activities. While economists and industrialists are good at basing business decisions on number crunching, they are often less cognizant of political, and in particular geopolitical, issues, even when these have a direct effect on the conditions of business. Political commentators and diplomats, on the other hand, understand politics but not always the restraints imposed by business conditions and the technical demands of, for instance, oil and gas extraction and transportation or electricity generation.

Energy Security Policy: the Response to Fear

As with other types of security policy, political decisions on energy security are fundamentally a response to fear.[1] The state has an interest,

and responsibility, in formulating policies that will counter threats, prevent damage to the state and its inhabitants, and assuage potential loss of security. To quote Russia's 2009 energy strategy: "Energy security is one of the most important components of the national security of the country. Energy security is the security of the country, its citizens, society, state, and economy from the threats to reliable supply of fuel and energy. These threats are determined by external (geopolitical, macroeconomic, business cycle) factors, as well as by the condition and operation of the country's energy sector."[2] A large number of threats, often of a mutually conflicting nature, do indeed apply to a state's energy situation. Each can wreak havoc with existing policy in several fields of governance.

Energy security is usually interpreted as having a supply of energy in sufficient volumes at an acceptable monetary cost. However, few countries are self-sufficient in energy resources, so they must import—which may cause them to become dependent on other states, the producer or transit states. Foreign policy initiatives may thus bring substantial threats to a state's energy security. Will deteriorating relations with export or transit states become a threat to the availability of energy supplies? Will the state's foreign policy instead lead to military intervention in a producer state, so as to ensure its energy supplies?

However, security policy cannot be limited only to national survival in the face of nefarious energy-exporting countries. A functioning security policy must also include provisions for damage prevention from natural disasters and economic crises. The climate and environment is certainly under threat from the transportation and use of energy resources. However, environmentalist political decisions based on public opinion may, in extreme cases, in themselves become a threat to the state and its survival, for instance if they result in a situation in which energy security can no longer be assured—because political decisions result in a lack of available energy in sufficient volumes. This ties in with a whole range of policy issues in domestic politics, all of which result in threats of one kind or another. Will party political initiatives limiting the exploitation of natural resources lead to a lack of available energy? Will labour market policy prevent the energy industry from hiring qualified workers? Will political decisions affecting the energy industry instead lead to a situation of high unemployment? Or prevent individuals and

businesses from using their cars for pleasure or the transportation of goods by raising the price of gasoline to unacceptable levels? If so, will this be seen as an acceptable trade-off to save the environment? And how will domestic politics be affected by this? The list goes on, since energy impacts upon everything in a modern society.

Russia's Energy Relationship with Europe

Russian Strategies of Energy and European Strategies of Security

The key energy relationship in contemporary Eurasia is that between Europe, in particular the member-states of the European Union (EU), as a consumer and Russia as a producer. Relative to this, Russia's energy relationships with the Central Asian republics and China remain sideshows. Important sideshows, for sure, but still sideshows. Production and trade volumes speak its own language, and in this, the energy trade between Europe and Russia dwarfs those between Russia and the others. In production figures alone, Russia in 2010 produced 505.1 million tonnes of crude oil, as compared to 81.6 million tonnes by Kazakhstan and 50.9 million tonnes by Azerbaijan. In the same year, Russia produced 588.9 billion cubic metres (bcm) of natural gas, in comparison to 59.1 bcm by Uzbekistan and 42.4 by Turkmenistan. Russia dominated in trade volumes as well. Taking the trade in natural gas as an example, Russia in 2010 exported no less than 199.85 bcm, of which 186.45 bcm went to Europe and 0.51 bcm to China, as compared to 19.73 bcm by Turkmenistan (to Russia, Iran, and China in descending order) and 11.95 bcm by Kazakhstan (all of which went to Russia, mainly or entirely for re-export to Europe).[3]

Russia has the world's largest natural gas resources and often, including in 2010, produced more crude oil than Saudi Arabia.[4] Russia is also the fourth largest producer of electricity in the world. By 2010, the Russian energy sector supported approximately 12 per cent of the global trade in oil and coal and more than 20 per cent of the global trade in natural gas.[5] Russia in the same year supplied more than a third of natural gas imports to the EU, which meant that Russia supplied almost a quarter of the EU's total gas needs, and Russia's share of the EU's gas imports has tended to grow. Other natural gas imports derived primarily from Algeria and Norway. Natural gas forms more

than a quarter of the EU's total use of energy.[6] Besides, while the EU produces the bulk of its electric power, this production is to a large extent based on imported resources such as natural gas and oil.[7] Russia also supplied approximately 30 per cent of oil imports to the EU.[8]

The energy sector is of key importance to Russia. Russian President Dmitry Medvedev in December 2010 noted that the energy sector contributed a third of Russia's GNP and that revenues from oil and natural gas formed 40 per cent of the state budget.[9] In fact, the oil and natural gas sector was then even more important to Russia than suggested by Medvedev. Of Russian federal budget revenues in 2010, no less than 46 per cent derived directly from oil and natural gas revenues (a figure, it should be noted, that only included extraction taxes and export duties, not gains taxes, value added tax, and other taxes which contributed additional revenues).[10]

The Russian oil industry is fundamentally run on a commercial basis but with significant state ownership. The same applies to the electric power industry. However, the natural gas industry is dominated by a state-controlled enterprise, Gazprom. Furthermore, all exports of oil and gas through pipelines are regulated by state-controlled enterprises, Transneft in crude oil and Gazprom in natural gas.

Moreover, the Russian energy policy is characterised by the state wishing to control the energy sector, as well as other strategic industries. There are several reasons for this, but one is the crucial role for the state budget of taxes and revenues from the energy sector. Russia is dependent on its energy exports.

While Russia is dependent on revenues from its energy exports, many European countries are equally or more dependent on Russia as a supplier of in particular natural gas. Russia has often been accused of using its "energy weapon" against the importing countries to secure advantages of various kinds.[11] Accusations have been many and varied, but they can be summarised as follows. Russia is said to wish to secure political dominance over neighbouring countries; secure an economic monopoly there; and limit the West's influence in Eastern Europe.

Few outside observers would argue against these statements, since they all, regrettably or not depending on one's political outlook, seem to form part of normal business practices in societies based on market economy. Indeed, Russia under the leadership of Vladimir Putin and

his successor Dmitry Medvedev developed, approved, and published its strategies of energy in documents which carried legal status, the first was the 2003 Russian energy strategy.[12] This document expressed key goals for Russia within the energy sector. The results of its prescriptions could be seen in several infrastructure projects since 2003 carried out within the state-controlled Russian energy firms.[13] In addition, Russia, as a state, tends to take legislation such as the energy strategy seriously and tends to follow official policy expressed therein.[14]

Parts of the conclusions of the 2003 energy strategy, primarily those concerned with foreign markets, sounded faintly alarming to Russia's neighbours. Yet, it should in all fairness be pointed out that the strategy devoted the bulk of its text to domestic Russian concerns. In addition to several references to energy security, the energy strategy also, for instance, indicated the need for environmental security.[15]

The 2003 Russian energy strategy concluded that the goals of the Russian energy policy with regard to foreign countries included the need to strengthen the position of Russia in the global energy market and maximise the efficiency of the export possibilities of the Russian energy sector, and to ensure that Russian companies had equal access to foreign markets, technology, and financing.[16] The export infrastructure had to become sufficiently diversified to allow exports in all directions as well as for use within the domestic market.[17] Russia would use its unique geographical and geopolitical location. The energy factor would be a fundamental element within Russian diplomacy, for the foreign policy realisation of the energy strategy, diplomatic support to the interests of the Russian energy companies abroad, and an active dialogue within the field of energy with, among others, the Commonwealth of Independent States (CIS), Northeast Asia, the EU, and the United States. The energy strategy occasionally used language reminiscent of military strategy: the state would support the Russian companies in the struggle for resources and markets.[18]

The 2003 Russian energy strategy listed the objective to secure Russia's political interests, in Europe and the neighbouring countries and within the Asia-Pacific region with natural gas, and through the entire world with oil.[19] However, it also contained the objective to remain a stable and reliable partner for the European countries and for the whole world community with regard to the export of energy.[20]

The 2003 energy strategy suffered from several problems. In addition to alarming consumer and transit countries, it also consisted of detailed objectives that, in some cases, soon no longer corresponded to market realities. In late 2006, Russia accordingly commenced work on an updated energy strategy.[21]

The new Russian energy strategy was approved in late 2009.[22] The new strategy was in many ways a response to the then ongoing financial crisis. Gone were the phrases that suggested military strategy. Instead the new strategy repeatedly emphasised the need to create a favourable economic environment.[23] Of the statements in the 2003 strategy that the energy factor would be a fundamental element within Russian diplomacy, nothing remained but the hardly unusual, in international commerce, conclusion that the strategic objective of the foreign energy policy was the Russian energy sector's full-scale integration into the world energy market, the enhancement of its positions thereon, and gaining the highest possible profit for the national economy.[24] The leading Russian energy companies would receive diplomatic support abroad.[25] Russia had national interests in the operation of the global energy market, but in the roadmap of state policy measures attached to the strategy there were no alarming statements beyond that of promoting Russian energy companies abroad and offering them "information, political, and economic support."[26] In fact, the energy strategy candidly admitted problems in Russia's foreign energy policy, including the financial crisis but also the continuing export dependence on transit countries and the politicisation in the energy relationships between Russia and foreign countries.[27]

In particular the 2003 energy strategy alarmed several neighbouring countries, in particular the transit states through which the Russian energy exports to Western Europe flowed. Several of them were not only transit states but also, in their turn, dependent on imported Russian energy. Would Russia use threats of the suspension of energy exports as a means to impose its will on other countries, and if so, would Russia be successful? In the 1990s, a few cases had occurred in which Russia attempted to gain concessions, for instance from Lithuania, Ukraine, and Moldova. However, none of these attempts were successful. Russia gained absolutely nothing from its attempts.[28] Despite frequent claims to the contrary, there have been no similar cases since the 2003

formulation of an energy strategy—with one exception. Russia has repeatedly used energy deliveries as a foreign-policy instrument against one particular foreign state, Belarus.[29] This was perhaps not surprising. First, Belarus was a state that since the signing of a treaty on December 8, 1999 envisioning greater political and economic integration was formally united to Russia in a two-state union. Second, Belarus had for domestic political reasons no support whatsoever to expect from the West, even if it cried foul.

This does not mean that there have been no commercial disputes, in which politics at times played a role. Several disputes involved Ukraine. The trade in natural gas from Russia and Turkmenistan to Ukraine was characterised by opaque relationships, secret contracts, and hidden beneficiaries, which, most observers concluded, engendered substantial corruption, with serious losses to both the Russian and Ukrainian states as well as consumers and shareholders there and elsewhere in Europe.[30]

However, some political analysts in Europe and elsewhere went further and claimed that what Russia really wished was to limit the growth of democracy in Eastern Europe and use Eastern Europe as a first step in the creation of a new global empire.[31] Such arguments were firmly rooted in the field of politics. Ultimately, this interpretation of Russia's energy export policy became an issue of faith. Either you believed in the threat, or you did not. It was hardly coincidental that the most extreme views on Russia as an energy supplier, whether positive or negative, tended to be found in those countries that by force of geography and history depended on Russian natural gas supplies and lacked most or all other options.

Strategic Threats as Perceived by Russia

The state control over much of the Russian energy infrastructure means that Russia finds its energy policy a vital part in various issues of national security policy. The Russian wish to avoid dependence, for instance, makes its leaders preoccupied with a wide range of perceived strategic threats in the same way that many CIS and EU countries instead perceive Russia as a threat. Russia will under no circumstances accept a position of dependence towards any other country, considering this a threat to its own national security. The Kremlin is no more immune to

the demands of national security than the countries of the EU, or for that matter any other.

Russia is, for instance, sensitive to what its leaders see as American attempts to prevent Russia from realising its energy export opportunities. The United States from 1999 made extensive efforts to promote the East-West Energy Corridor Project, which includes the Baku-Tbilisi-Ceyhan (BTC) oil pipeline and the South Caucasus gas pipeline (SCP, then also known as the Baku-Tbilisi-Erzurum, BTE). Russia regarded this as a purely geopolitical move.[32] Considering the economic facts behind the projects, it was hard to disagree with this conclusion. American policy towards the Caspian and Central Asia then showed a number of idiosyncrasies that made it hard to disassociate it from geostrategic power projection in order to check Russian, Iranian, and Chinese economic, political, and military influence in the region. By the late 1990s, the United States had developed a policy that, regardless of an outspoken and often quite genuine emphasis on the promotion of democracy, human rights, and economic development, primarily aimed to (1) contain Russia, (2) isolate Iran, (3) reward old and new allies (Turkey, Georgia, and Azerbaijan), (4) reduce dependence on energy sources in the Middle East, and (5) project American influence into what by then seemed to be a regional power vacuum. The outspoken aim of the BTC project was to build a crude oil pipeline that could move Caspian oil from Azerbaijan to the United States and its NATO allies. A route through Russia or Iran was never acceptable to the United States for political reasons, and a route through Armenia was unacceptable to Azerbaijan due to the Nagorno-Karabakh dispute. Turkey did not accept an additional pipeline to the Black Sea, as this would put further pressure on the already crowded Bosphorus Strait, and besides, the United States believed that any new Black Sea routes might become subject to Russian pressure. It was for these reasons eventually decided to run the pipeline from Baku in Azerbaijan through Tbilisi in Georgia to the deep-sea Mediterranean port of Ceyhan in southeast Turkey.[33] American interests were clearly better served by moving oil from the Caspian through Georgia and Turkey than through Iran and Russia, since the latter could not then control parts of the energy resources market or, in the case of Russia, even monopolise segments of it. The reasons for the BTC were thus clearly political, not economic. To

make the pipeline commercially attractive, the United States needed to influence the government of Kazakhstan (and possibly also that of Turkmenistan) to construct a new pipeline under the Caspian to connect to the BTC, a goal that remains unrealised.[34]

Yet another strategic threat was the Turkish demand to stop the Russian oil tanker transit traffic from the Black Sea to the Mediterranean. For Russia, this was not only a question of oil tankers. By forcing a stop to the tanker traffic, one would also tear up the Montreux Convention of 1936, which gave Russia and the other Black Sea states the right to regard the sea route, through what in practice is the commercially most important city of Turkey, as an international waterway—which also gave Russia the right to move naval forces in and out through the same route. This made the transit issue a serious threat to both Turkish and Russian security policy concerns and national interests. Any change in the terms of the Montreux Convention would bring implications for Russia's naval strategy. This occasionally caused diplomatic rows between Turkey and Russia, for instance when Russia planned to sell S-300 Zenith surface-to-air missiles to the Greek Cypriot government in 1998,[35] and during an oil and gas conference in Istanbul in February 2004, when the Russian representative, among other comments, pointed out that "alarmism of Marmara straits transit is being deliberately built up for political reasons" and that such "alarmism is dangerous, and may get out of hand." The Russian side also pointed out that the straits transit was still at only half capacity, according to a preliminary study, and that the key problem was the need for an improved traffic control and onshore navigation system, not the transit volume.[36]

There was of course no denying that the Straits formed a bottleneck, and that weather conditions also caused delays. According to some calculations, one oil tanker passed through the Bosphorus every twelve minutes (in daytime; the Straits were closed to large ships at night).[37] Furthermore, Turkey expected terrorist attacks aimed at the transit traffic.[38] The Montreux Convention of 1936 stipulated two rights, the right of freedom of navigation and the right to dispel congestion in the Straits, but the question remained how to balance these two rights, since the Montreux Convention did not allow the imposition of tolls in the modern sense. Turkey therefore proposed an international, UN-led convention to protect the Turkish Straits.[39] However, since a new

convention would result in the tear up of the Montreux Convention, Russia was not interested. There was no question that the entire issue was politicised; Turkey appeared, for instance, far less keen to reduce the number of its own chemicals tankers passing through the Straits, even though any leaks from them would be significantly more dangerous than oil spills and this traffic indeed posed dangerous targets for terrorism in its own right. However one chose to regard this question, it remained a challenge, but the geostrategic threat perceived by Russia made the problem with the transit particularly difficult to resolve.

The Straits issue also highlighted the possibility to use environmental aspects simultaneously as a worthy cause and a powerful means for exerting political pressure in negotiations concerning energy exports. In the media-driven world of today, no government that wishes to be seen as modern can afford to neglect environmental concerns. However, due to the nature of the energy industry, such issues tend to surface wherever an oil pipeline or tanker port is to be built.

Pipeline Strategies for Profit and Influence

Oil and natural gas can be transported by pipeline, sea, rail, or road. When it comes to natural gas exports, more than two-thirds of international exports are still transported through pipelines. Natural gas is shipped as liquefied natural gas (LNG) to several important markets, including those in Japan and South Korea. Following a massive increase in LNG shipments from Qatar, LNG has reached the position of accounting for 30.5 per cent of the global gas trade. Unlike natural gas, the global trade in crude oil is primarily transported by oil tanker. Even so, very significant volumes are exported from Russia through pipelines.[40] This is not likely to change in the near future, nor should it.

Pipelines are environmentally more sound than other types of transport. While the EU approves of liberalised markets, indeed at times seem to suggest that a liberalised spot market for oil and natural gas would solve all problems inherent in the energy trade, market liberalisation in itself will not reduce the risk of an unfavourable impact on the environment. Oil, for instance, is already being sold on the global market, and while the environmental threat from shipwrecked oil tankers has been reduced through better ships, it has not been eliminated. Natural gas too can be shipped in tankers as LNG, but this

leads to increased tanker traffic. With current levels of demand, such huge volumes of energy are needed that oil and gas pipelines are still required, and they are both cheaper and environmentally safer than other modes of shipping.

However, when an expensive pipeline has been built, it cannot be moved. To invest in a pipeline leading to a single customer makes the supplier vulnerable to demands from the customer to re-negotiate the price of energy or cancels imports, after the investments have already been made and the project is committed. This was the lesson Russia learned with regard to the Gazprom-sponsored gas pipeline to Turkey known as Blue Stream. This pipeline began operations in December 2002, but already in March 2003, the Turkish side suspended imports (reportedly because of this country's recession) in order to re-negotiate the agreement in its favour. Geopolitical factors also complicated the deal, because of the Turkish support for the American-sponsored BTE pipeline.[41]

A key strategic concern when projecting an international pipeline is whether the pipeline connects, directly to the end consumer, or whether it will pass through transit states. If so, will political decisions or the international context affect how the pipeline can be used, at present or in the future? Because of perceived problems in its relations with the present transit states (primarily Poland, Ukraine, and Belarus), Russia is in the process of developing a system of natural gas pipelines (Nord Stream across the Baltic and South Stream across the Black Sea) that will bypass the transit states and instead deliver gas straight to the West European markets. From the point of view of state power, these pipeline projects are often regarded as hostile to European governments. The EU accordingly wishes to promote a third natural gas pipeline, the Nabucco, that would deliver natural gas through Turkey to Southeastern Europe and bypass Russia in the same way that the other pipelines will bypass much of Eastern Europe. This project is no less strategic in nature than the Russian-led projects. Like the Russian projects, the commercial rationality of the project has been questioned, yet its function as a bypass option is obvious. Like the Russian projects, the main motivation may well be political rather than commercial. The parties advocating the project are determined to push through

the project, and the substantial extra costs will have to be covered by somebody, in the first instance the companies involved in the project but ultimately the consumers of the gas.

The irony is that no one pipeline will be able to satisfy Europe's demand for natural gas, as is evident from even a cursory investigation of the three pipeline projects.

Nord Stream

- Connection: Russia-EU (via the Baltic Sea).
- Transport capacity: 55 billion cubic metres per year.
- Partners: Gazprom 51 per cent, BASF/Wintershall 15.5 per cent, E.ON Ruhrgas 15.5 per cent, Gasunie 9 per cent, GDF Suez 9 per cent.
- Scheduled for operation: Two lines, the first scheduled for late 2011, the second for late 2012.[42]

South Stream

- Connection: Russia-EU (via the Black Sea).
- Transport capacity: up to 63 billion cubic metres per year.
- Partners: Gazprom 50 per cent, ENI 50 per cent.
- Scheduled for operation: 2015.[43]

Nabucco

- Connection: Caspian region, Middle East, Egypt to the EU.
- Transport capacity: up to 31 billion cubic metres per year.
- Partners: Bota, BEH, MOL, OMV, RWE, Transgaz (each 16.67 per cent).
- Scheduled for operation: 2017.[44]

- Total EU gas consumption (2010): 490 billion cubic metres.
- Total EU gas imports (2010): 327 billion cubic metres.
- Total EU gas imports from Russia (2010): 114 billion cubic metres.[45]

The construction of the Nord Stream and South Stream pipelines has remained a concern for the present transit states in the Russian gas exports to Western Europe. Direct exports of gas to Germany in particular reduce their ability to coerce Russia into offering political

and economic concessions. Obviously, the ability of the transit states to withstand Russian coercion would lessen too; their vulnerability can be expected to increase—thus causing a reduction in security as perceived by a number of key leaders there. In addition, the income of the transit states may also be slightly reduced, since they could lose transit fees. However, not one of the transit states depend on transit fees for their economic development.

Moscow and Brussels

Russia's energy relations with the EU remain somewhat uneasy, in particular because of the various problems between Russia and the transit states, primarily but not exclusively Ukraine and Poland.

Yet, what is less frequently mentioned, but no doubt still more important, is this: Russia will under no circumstances accept a position of dependence towards any other country—since this is regarded as a threat to Russia's own security.

From a commercial point of view, the Russian outlook can be summarised by Gazprom's views on what characterises security of supply,[46] which indeed is the goal of most energy producers:

- physical security (reliable infrastructure, sufficient resource base);
- economic security (stability);
- legal security, and
- secure demand (long-term projects and contracts).

The need for a secure demand derives from the very substantial investment costs required for construction of new energy infrastructure. However, this requirement has not gone down too well with the political leadership of the EU.

There is, however, no unified view from Brussels, since no EU member state has set aside its own national interests for the interests of the union. Besides, EU energy policy, such as it is, suffers from several dilemmas and contradictions.

First, the EU can for political reasons not decide whether the producers (Russia and OPEC) should be regarded as a problem or the solution to existing problems, that is, the problems of energy security. Indeed, this dilemma also applies towards European energy producers; for political reasons the EU simultaneously wants to protect the energy

security and labour markets of the member states and split up the major energy companies in order to liberalise the market—two goals that often are believed to be at cross-purposes.

Another contradiction is that the EU simultaneously attempts to prioritise a reliable energy supply, an open energy market, and the achievement of environmental goals—despite the fact that these goals often contradict each other.

Again, the EU also considers too much volatility in energy prices to be a problem, despite the fact that it simultaneously opposes long-term fixed-price contracts of the type that is common in the Russian natural gas exports to Europe.

The EU certainly wishes to liberalise the energy market, but the EU is in this case an anomaly; the rest of the world is in the process of nationalising its energy resources, has already done so, or at least acts forcefully for its own national energy companies.

The various dilemmas and contradictions in EU energy policy do not prevent the EU from being a powerful actor in its various trade relationships. Indeed, while the EU consistently advocates liberalisation, it acts unilaterally, which suggests that the EU in the long term will act as geopolitically as other great powers.

The EU's resolute, unilateral actions in trade was nowhere more visible than in its introduction of what is commonly referred to as the Third Energy Package. Following a legislative process initiated by the European Commission in September 2007, the European Parliament on April 22, 2009 endorsed two directives and three regulations that constitute the Third Internal Energy Market Legislative Package (collectively and commonly referred to as the "Third Energy Package"). The European Council approved these five documents on June 25, 2009, from which date member states would have 18 months to transpose the new rules into national law.

The Third Energy Package should be read in the context of the Energy Charter Treaty (ECT), which was signed in December 1994 and entered into legal force in April 1998. The ECT, in the words of the Energy Charter Secretariat, aims to play an important role as part of an international effort to build a legal foundation for energy security, based on the principles of open, competitive markets and sustainable development. The ECT provides a set of binding rules that cover the

entire energy chain, including the terms to transport energy across various national jurisdictions.[47] Russia signed the ECT in 1994 but never ratified it; in 2009 Russia officially announced that it did not intend to become a contracting party to the treaty.

The Third Energy Package contained what many regarded as special anti-Gazprom clauses through which national governments can deny a non-EU company entry into the EU's internal market if this would be deemed to threaten the energy security of the EU member states.[48] Such an assessment can, for obvious reasons, only be made on political grounds, so Moscow interpreted this as an explicit threat to Russian companies.[49] This legislation can, as a means of coercion, also be applied retroactively, to compel non-EU companies to sell existing investments in the EU's internal market.

For the EU, the solution to the various problems relating to energy security is usually described as diversification. In its essence, this means that the EU wants to import Russian energy to avoid dependence on politically unstable OPEC member states, while at the same time the EU also wants to import energy from the OPEC states to avoid dependence on Russia, which is regarded as large and dangerous (now) or politically unstable (in the 1990s).

While there is some merit in the argument to diversify political risk, the desire for diversification at all costs brings implications that are not always fully assessed. As in all politics, emotions have played a role. It feels safer, for instance, to import natural gas through the planned Nabucco pipeline through Turkey instead of through gas pipelines through Russia. Then the EU will not be dependent on Russia, or so the argument was. However, the EU will then be dependent on Turkey, which several member states would hate to see in the EU.

Furthermore, the natural gas under consideration still comes from the very same gas deposits, those in the Caspian region. By focusing on multiple pipelines out of the production region, the EU is diversifying its transportation risk, but not the risk that the gas suddenly becomes unavailable due to a political crisis or natural disaster where the gas is extracted.

So discussions continue, no decision is reached, and the gas producers become impatient and build gas pipelines to China instead. Diversification, which already from the outset was largely imaginary,

thus only results in a reduction in the total amount of gas available for the EU market.

Situations certainly exist in which diversification will be of use. If a producer no longer delivers, energy supplies can then be brought in through alternative routes—as long as other producers work on different production fields. No present diversification scheme would help if a major war broke out around the energy fields in the Persian Gulf region. This would create energy supply problems worldwide, regardless of which route was chosen.

Besides, any present supply of energy resources runs a greater risk of interruption through natural disasters and technical problems in existing import infrastructure than through political actions. For sure, alternative routes and producers may be helpful also in case of a natural disaster in a production area, but only if the energy supplied comes from production areas unaffected by the disaster and not only through different transportation networks.

To conclude, the EU's dilemma is not only that it has no unified energy policy, but that its internal policies suffer from several contradictions. To begin with, dependence on energy imports will remain; the EU's own energy resources are insufficient. Second, the EU alone cannot prevent global warming but still makes the attempt. Nuclear power would lessen these problems but creates political unrest within several EU member states. The EU has no common energy policy, since no member state wants to let go of its national energy policy. Also, the EU focuses on increasing supplies of imported energy, through diversification, instead of reducing demand by increasing energy efficiency.

Meanwhile, diversification usually becomes a mere choice of transportation networks, not the ultimate source of energy. Ongoing discussions concern pipelines instead of the geographical origin and nature of the natural resources and may, together with ambitious environmental goals, in the long term even weaken the EU's energy supply security.

Russia's Energy Relationship with Central Asia

Central Asia as an Energy Producer

In the transition from the command economy of the Soviet period

to the market economy of independent Russia and Central Asia, the Russian energy industry gradually changed its strategy towards the energy-producing regions of the latter. Central Asia was no longer seen merely as a source of cheap energy; market relations entered the picture and with them, the understanding of the need for mutual economic development.

The main drive in the command economy was not consumer demand or choice but the appropriate plan drawn up by government in which the national resources were allocated to fulfil political and social policies. Although Russia and the Central Asian republics upon independence reverted to market economic conditions, the thinking and mindset of the command economy continued to affect their energy sectors. In particular natural gas, tied up in extensive pipeline infrastructure projects, remained closely connected to government policy. Likewise, energy pricing policies have only slowly caught up with market economy drives.[50]

Russia has repeatedly stated its ambition to become a regional leader in the sphere of Eurasian energy security. This ambition includes the provision of stable and predictable energy prices and long-term stability of energy demand and supply in Eurasia. From the outset, Russia wanted a full-scale economic and technological integration with the Eurasian system of energy communications in order to provide what it termed rational energy flows in Eurasia.[51] From the point of view of existing infrastructure, this made sense. In the Soviet period, the region's energy infrastructure was connected. To a certain extent, it would be rational to integrate new projects as well.

Yet competition and geopolitical rivalry remain, in particular with regard to the final destination of the energy produced in the region. As lucrative energy markets, China, the EU, and the United States all have interests to safeguard. Besides, Russia's long-standing energy relationship with Central Asia should no longer be taken for granted. Turkmenistan since 1997 exports small volumes of natural gas to Iran and from late 2009 exports yet smaller, but growing, volumes to China. In particular the latter would have the potential to become a major destination for Central Asian energy, although the gains realised so far remain small.

Besides, transportation bottlenecks remain and infrastructure often remains insufficient for Central Asian gas, and, to some extent, oil

exports even to gain available market share in European markets. For exports elsewhere, such as to China or India, transportation bottlenecks still pose even greater problems.

Since the Central Asian gas and oil resources are landlocked and there is no obvious access to consuming countries, much of the debate has been devoted to geopolitical conditions, on the one hand, and cost-benefit analyses, on the other. Political scientists have investigated the former, while the industry has been more interested in the latter. A combined approach is needed. Transportation distances are undeniably long and at times difficult. Yet it is dangerous to separate the two questions of production and access. A pipeline built for political reasons may remain idle, if no oil or gas is produced to load it. On the other hand, there is little point in developing a field for production if political conditions preclude the construction of transportation infrastructure to carry the produce. It would for this reason often make better commercial and political sense to regard the various export routes as connectors, that is, extensions of the production field, instead of separate, politically driven projects. And it should be admitted, many projects are politically driven. Whereas the EU in a perfect world should focus on how to acquire, say, gas supplies to common EU markets in sufficient amounts and at lowest possible transportation costs, all too often the issue instead boils down to national interests and national security. These factors, rather than geopolitics or commerce, would seem to set the limits for what can be termed realistic routes for supplies to EU markets.

The Caspian Sea and Central Asia form a region rich in energy resources but geographically, it presents a number of unusual problems for oil and gas prospecting, exploitation, infrastructure development, and transit.

First, there are logistical constraints. Land transportation infrastructure is not always well developed, and railways and highways are limited. With regard to the Caspian, the only way to bring in heavy equipment by sea is through the Volga River. Even so, certain types of floating oil production platforms for deep-water exploration and exploitation are far too big to move into the Caspian. Such equipment hardware is generally not available locally, since production platforms usually are built with parts from different countries. This means high costs for rigs and vessels. There are thus significant logistical constraints,

and cycle times in exploration and exploitation are long.[52] This affects transportation as well. There are only some seventy oil tankers in the Caspian, and most are over-aged.[53]

Second, persistent doubts would seem to remain with regard to the actual oil and gas reserves available in the region. These doubts generally derive from the fact that the Soviet Union emphasised exploration and exploitation of the oil reserves in first the Volga-Ural region, then in West Siberia, not in the Caspian or in Central Asia. Some argue that the Azerbaijani oil deposits thus are unlikely to be as large as advertised. If they had been, why would the Soviet leadership in 1959 have taken a strategic decision to spend vast resources to prospect for and extract oil in Siberia, when they already had a firm control over Azerbaijan, where an infrastructure was already in place? Yet, by 1972 the Soviet Union derived less than 5 per cent of its total oil production from Azerbaijan.[54] However, this strategic decision of the Soviet leadership is easily explained by the fact that much of the northern Caucasus including oil-producing areas there had been occupied by German forces in the Second World War, while important parts of both present-day Azerbaijan and Turkmenistan were briefly held by British troops in the First World War and its aftermath. The Soviet leadership thus had every reason to concentrate oil and gas production to its central regions in anticipation of a Third World War. Yet the fact remains that there have been few independent audits of the oil and gas deposits of the Caspian and Central Asian region, and some of those that have been made, have never been released to the public.

Third, the often unstable relations and external agendas among the various countries of the region, and the fact that the issue on how to decide the legal status of the Caspian remains unresolved, hamper both prospecting and exploitation as well as the transit of energy resources.

Fourth, and of lesser importance, there are natural complications such as deserts and wilderness in Central Asia, recurring ice in the north of the Caspian, extreme depth differences at sea (from 5 to 1,000 m in the Caspian), and a high level of earthquake activity throughout the region.

Apart from these, there are more general problems, not unique to the Caspian and Central Asian regions. Many would argue that a sustained hydrocarbon export growth would mean that the states of the region run the risk of falling victim to "Dutch disease." This is an

economic phenomenon (named after conditions in the Netherlands of the 1960s) in which increased exploitation of a nation's natural resources ultimately decreases its non-resource exports through the rise in value of the national currency, which makes its manufactured goods less competitive, thereby increasing imports, and decreasing productivity. Dutch Disease ultimately leads to de-industrialisation of a nation's economy.

The sustained export growth, and in particular the expectation of yet more impressive future growth, has led to surplus pipeline capacity with regard to oil (but not yet gas). The amount of locally produced oil in the region is much lower than the total oil pipeline network capacity. This causes much rivalry for oil among importers and pipeline operators.[55]

On the other hand, production costs in Central Asia for both oil and gas are significantly lower than in, for instance, Siberia. A key reason for Gazprom's long-standing interest in Central Asian gas is that the necessary investments for gas production in Central Asia are substantially cheaper (three to five-fold) than the investments needed for corresponding Siberian projects.[56] This will indeed make Central Asian gas a viable proposition for Gazprom even when the firm can no longer buy cheap gas directly.

However, there is also the domestic need for oil and gas to take into consideration. Domestic demand tends to grow, at least whenever the economy is growing. However, energy efficiency is a sadly neglected field throughout the former Soviet space. At times, domestic demand is growing faster than production can be increased. This is a particular problem for those economies that depend on the export of energy resources to bring in revenues. Due to the wasteful practices inherent in the Soviet system, all Central Asian energy producers need to improve energy efficiency, so as to allow more energy for export.

Central Asia as an Energy Exporter

Among the Central Asian states at least Kazakhstan, Uzbekistan, and Turkmenistan have the capacity to produce more oil and gas than they need for domestic consumption. Kyrgyzstan and Tajikistan have important energy resources in particularly hydropower but lack substantial oil and gas deposits. Azerbaijan is an important energy producer in its own right as well as a potentially important transit

country for Central Asian energy. The remaining states of the Caucasus, Armenia and Georgia, have insignificant and only small oil and gas reserves, respectively.[57]

Unlike oil, which in Russia, Kazakhstan, and Azerbaijan was privatised soon after the dissolution of the Soviet Union and due to the existence of an international market, it proved easier to market oil under commercial conditions, natural gas remained the concern of governments. Throughout the post-Soviet period, natural gas exports were in the former Soviet republics generally conducted under bilateral intergovernmental agreements. These provided a framework for sales, transit volumes, and prices. At times, other issues such as storage and establishment of joint ventures in production were included as well. Within the framework of such intergovernmental agreements, the firms involved in the trade negotiated commercial contracts. These were usually supplemented by annual agreements that specified exact prices and volumes for the following year. This was particularly true for the special relationship between the Central Asian producers, Russia, and Ukraine but to some extent applied to most natural gas exports within the post-Soviet space.[58]

The Central Asian oil sector, although taken together still perhaps best described as semi-privatised, has been moving steadily into the international market. Transportation bottlenecks remain, as well as some political considerations with regard to export routes, yet pricing mechanisms and price levels have converged with those of the international market. A similar although slower process has been ongoing with regard to natural gas. Russian and Central Asian gas prices are moving in the direction of European price levels. In March 2008, the heads of the gas export monopolies of Russia, Kazakhstan, Uzbekistan, and Turkmenistan indeed jointly declared that from 2009, they would all sell gas at European market prices.[59] The subsequent financial crisis delayed but did not halt this development.

In addition, the Central Asians have been negotiating gas exports with China since 2006. In January 2008, they finally reached an agreement on pricing, confirming that a gas pipeline from Turkmenistan to China would be built and be in operation already in 2009. Many media reports concluded that the Chinese had outmanoeuvred Russia's Gazprom and would now acquire the gas supplies desired by Russia. Not so. Gazprom

supported the Chinese deal, and a key company within the Gazprom group would build part of the pipeline to China. And why not? The Chinese pipeline would be loaded with gas from fields only then being taken into production, with Chinese investments, while the Russian pipeline system remained adequate for existing exports to Europe. The opening of the Turkmenistan-China gas pipeline on December 12, 2009, in a ceremony attended by Presidents Gurbanguly Berdymuhammedov of Turkmenistan, Nursultan Nazarbayev of Kazakhstan, Islom Karimov of Uzbekistan, and Hu Jintao of China,[60] thus did not necessarily imply less gas for Russia or indeed for Europe as a whole.

Russia's Energy Relationship with China

Strategies for Crude Oil

China has a great and growing need for additional energy imports. In 2010, China surpassed the United States as the world's largest energy consumer.[61] Diversification of oil and natural gas exports away from European markets to China is already underway, and both Russia and the OPEC member states of the Middle East intend to increase energy exports to China—at the West's expense.

China does not mind investing in dictatorships; countries such as Myanmar are already willing suppliers to China. However, for geostrategic reasons China is concerned about how to safeguard the transportation of imported resources back home. China regards Central Asian and Russian energy as particularly important in this respect since there is no need for transportation by sea, and thereby no need for protection by a blue-water navy. In case of a future crisis with the United States, China would be hard pressed to sustain imports through the existing sea lanes, since these would be exposed to and likely under the control of the United States Navy.

Even so, China and Russia still perceive each other as geostrategic rivals and potential strategic enemies.[62] Russia has been unwilling to accept the construction of an oil pipeline that would lead only to the Chinese market. To build such a pipeline now would, in case of future conflict, be a tremendous waste of resources. Although China and Russia signed a framework agreement in March 2003 to build an oil pipeline from Angarsk in East Siberia to Daqing in Heilongjiang province,

northeastern China, the Russian political leadership realised the political risk in such a solution. Far better is then to build the oil pipeline from Siberia along a route, as proposed by Japan which offered to finance part of the project, that would bypass China and terminate at Russia's Far East port of Nakhodka or somewhere in the vicinity of this port. While a pipeline terminating in Daqing in effect would be a hostage to Russo-Chinese relations, a pipeline to Nakhodka or thereabouts could be used as a means to export Russian oil by tanker not only to Japan but also to other foreign buyers in the Asia-Pacific region, including even China—as long as a sufficient volume of oil was available. In June 2004, the director of the Russian Federal Energy Agency, Sergei Oganesyan, went so far as to suggest that the Daqing pipeline might eventually be built, but only as long as the Nakhodka pipeline was constructed first and then only in parallel with this pipeline.[63] In the end, both destinations would be implemented. The Eastern Siberia–Pacific Ocean (ESPO) oil pipeline would be built, as would a branch from Skovorodino to Daqing. Construction of the ESPO began in 2006.[64] Work on the branch to Daqing began in 2009 and the pipeline was inaugurated on August 29, 2010 by Prime Minister Putin, with regular flow set to commence in January 2011.[65] However, almost immediately upon the opening of regular supplies a dispute arose over the pricing policy of the oil exported through the Daqing branch.[66]

The perceived strategic threat from a pipeline terminating in China was not only geostrategic but also economic. To invest in a pipeline leading to a single customer leaves the supplier vulnerable to demands from the customer to re-negotiate the price of energy, after investments have already been made and the project is committed. This was, as noted, the bitter lesson Russia learned with regard to the Gazprom-sponsored gas pipeline to Turkey known as Blue Stream, which began operations in December 2002 but already in March 2003 saw the Turkish side suspending imports in order to re-negotiate the agreement in its favour.

Even so, Russia's 2009 energy strategy makes it clear that there will be an emphasis on export diversification to the Asia-Pacific region, in particular China, Japan, and South Korea. Russia hopes eventually to increase the eastern direction's share of its energy exports from 6 per cent to 22-25 per cent for crude oil and oil products, and from zero to 19-20 per cent for natural gas, explicitly to reduce Russia's dependence on exports of energy resources to Europe.[67]

Strategies for Natural Gas

The quest for exporting Russian natural gas to China began in March 2006, when then President Putin on the first day of a visit to China signed a joint declaration with his Chinese counterpart on energy cooperation and announced a number of agreements on energy supplies and joint ventures with the Chinese National Petroleum Corporation (CNPC), including one by Gazprom. A member of Putin's delegation later elaborated to the media: a natural gas pipeline would be built from Russia to China, to be commissioned in 2011 at the cost of $10 billion. In addition, Gazprom had agreed with its Chinese partners on a price formula for gas deliveries. Putin himself told the press that the first stage of the project was the construction of a new gas pipeline, named Altai, from West Siberia to China's western border. This route had been chosen because deliveries from West Siberia seemed "easier to carry out and faster." In a second stage, another gas pipeline would be built from East Siberia. Exports from each project would total 30-40 bcm per year.[68] Gazprom President Miller later explained that annual exports would total 68 bcm, with a projected throughput capacity for the western route of 30 bcm per year.[69] As for Putin, he later suggested that in ten to fifteen years, no less than 30 per cent of Russian energy exports would go to Asia—an ambition which Russian experts believed would be hard to realise.[70]

Russia and China have since repeatedly attempted to conclude major gas supply deals. They have not been successful because of the key issue of pricing. Simply put, Gazprom wants its natural gas sales to China to be comparable in profitability to the sales to Europe, while China wants to pay less, wishing to see imported natural gas close in effective price to domestic coal. With the oil-linked natural gas prices for Europe again rising, the gap between what Gazprom and its Chinese counterparts desire will widen.[71]

The Altai pipeline project remained on the Gazprom website but was in time quietly put on hold until at least 2015-2018.[72] The project was not mentioned among important infrastructure projects in Russia's 2009 energy strategy.

In China, coal accounts for roughly 80 per cent of the overall domestic energy production. China has also made significant investments in renewable energy sources, in particular wind power

which has grown 36-fold since 2005 and in 2010 contributed more than four times electric power than China's nuclear power plants, yet less than five per cent of China's total electric power production. Thermal power plants still produce the bulk (close to 80 per cent) of China's electricity production.[73] Domestic coal thus continues to provide the benchmark for what China is willing to pay for imported natural gas.

New Dynamics in Eurasian Energy Strategies

Unconventional Oil and Gas—The New Equaliser?

Since the energy sector answers to and depends on the demands of both technology and politics, it is characterised by a rapid and often dramatic pace of change.[74] At present, there is a sharp rise in demand for energy from newly industrialising economies. The supply side suffers from declining reserves in many countries, which makes it less responsive. There is a widely acknowledged need for environmental protection, which makes new infrastructure projects increasingly difficult and expensive. Global infrastructure is ageing. In some areas, there is weather-related damage previously not foreseen. There may also be attacks on existing energy infrastructure by terrorist groups, in particular in volatile regions such as the Middle East and parts of Africa but attacks could take place anywhere.

Unconventional oil and gas deposits are sometimes assessed to have the capability to change the global market for oil and gas, since they, like coal, are expected to be far more evenly distributed worldwide than conventional oil and gas reserves.

Unconventional oil deposits include, among others, tar sands and shale oil, while unconventional gas deposits can be found as, for instance, shale gas and coal bed methane (CBM), the latter in existing coal mines. Major shale gas deposits are believed to exist in several European countries, including Germany, Austria, Poland, Hungary, France, Sweden, and Russia. There are ongoing projects in Ukraine as well. Major deposits of unconventional oil and gas have also been found in North America, India, Australia, and China.

However, development and production costs still remain high. Drilling costs are significantly higher. In addition, the insufficient pipeline infrastructure in Europe and the higher population density there

as compared to the United States cause further problems in developing the deposits. Moreover, the environmental impact of production is very high compared to conventional oil and gas production, since it is often close to strip mining.

Even so, the appearance of unconventional oil and gas reminds us that the energy sources in current use today may not necessarily be the sources of choice for energy forever. A half-century from now, renewable sources of energy or even completely new ones may well prove to be of higher importance than present ones, in the same way that first oil, and then, natural gas replaced coal as the energy of choice in many industries.

The development of unconventional gas in China will be a significant factor in any development of strategies of energy for Russia and Central Asia. The potential for both coal bed methane (CBM) and shale gas is high in China. However, the projected production of 5 bcm per year of CBM in 2010 reached only a quarter of the planned level.[75] As for shale gas, commercial exploration in China can only be said to have begun in mid-2011 when the first round of shale-gas licences was issued. A further problem is that shale gas production requires large volumes of water, which is not easily available in promising regions such as the Tarim deserts in Xinjiang and several others.[76] On the other hand, the small volumes of unconventional natural gas so far produced can be compared to the similarly small supplies so far imported through the Central Asia-China natural gas pipeline. In its first year of operation (2010), this pipeline delivered only 3.55 bcm of natural gas, even though capacity was expected to increase in 2011.[77]

The Fear of Climate Change and Rivalry for Energy Resources in the Arctic

Whenever discussions touch the Russian energy sector, a case is nowadays often made for the rich energy resources in the Arctic, for instance in Barents Sea, and the possibility of geostrategic rivalry for these resources. Important natural resources including energy reserves exist in the Arctic, so the assumption is that this will lead to conflicts or even resource wars. The potential military risk of an escalating rivalry for energy and other raw materials was highlighted in late 2009 as a new threat to national security by the secretary of the Russian Security

Council, Nikolai Patrushev. However, his worries may have been premature. Nothing of the kind was subsequently mentioned in the published version of the new Russian military doctrine of February 5, 2010.[78]

While commercial rivalry can be expected in the Arctic, it is quite unlikely that there will be any military adventures there unless other, more important crises occur as well. Indeed, several factors argue against the risk for Arctic energy resource conflicts in the foreseeable future. First, almost all known Arctic energy reserves are located within the 200-nautical mile exclusive economic zones of the states of the Arctic region, so there is at present little scope for disputing national ownership and control. Second, the climate conditions in the Arctic still pose a far greater problem than national rivalry for the exploitation of Arctic energy reserves. At present, Russian energy companies lack the technological know-how to fully develop the Russian fields, so they will have to team up with foreign companies such as Norwegian StatoilHydro and French Total. Third, the severity of conditions in the Arctic means that development and exploitation costs are high. The global financial crisis led to a lack of demand for energy that, coupled with the high development costs, meant that development of new gas fields in the Arctic was postponed.

This certainly happened in Russia, which entertains high hopes for the Shtokman field. However, the present lack of demand and high development costs in early 2010 made Gazprom and its partners Total and StatoilHydro decide to delay the Shtokman field for three years. First pipeline gas deliveries would be delayed until at least 2016, while deliveries of liquefied natural gas (LNG) were expected to begin no earlier than in 2017.[79]

However, the ongoing climate change will have other implications as well. The melting of the Arctic ice brings the prospects of the Arctic being ice-free, and thus navigable, during the summer months. This would open up a number of Arctic sea routes, including between China and the Far East and the North American east coast and between China and the Far East and northern Europe, including Russia's Shtokman field.[80] These routes would be significantly shorter than the present sea routes through the Suez and Panama canals. However, the dynamics of climate change make it difficult to estimate when such routes would become commercially viable.

On the negative side, the warming of the hitherto frozen Arctic tundra will create problems in the construction and maintenance of land-based energy infrastructure. The ground, unstable if ice-free, may not be able to support overland pipeline infrastructure. This particularly applies to already existing infrastructure, which was constructed without adequate safeguards against this, at that time poorly understood, phenomenon.

High energy prices will eventually no doubt generate new technologies to develop energy resources in the Arctic. However, current prices remain too low to justify such technological developments. New technology is needed to enable drilling in deep water, as well as equipment that can withstand ice flows. Ice-capable technology of all kinds will be required, so as to allow access over time despite seasonal and year-to-year ice fluctuations, in gear for drilling and in anything from transportation infrastructure to refuelling depots. Oil prices will have to rise and be expected to remain high enough over time to justify new, expensive infrastructure projects in an environment as hostile as the Arctic. This will particularly affect major projects the investment costs of which would take many years to amortise, that is, exactly the projects most needed to fulfil future demand for energy.

Nuclear Power after Fukushima and the Quest for Renewables

Proven oil and natural gas reserves are mostly concentrated in politically unstable regions and geologically challenging areas such as the Arctic. Coal can be found almost everywhere, but its use in energy production, like oil and natural gas, leads to the emission of greenhouse gases which causes environmental problems and climate change. Hydroelectricity, where available, can be used to offset some of these problems but harms the environment in other ways. Two quite different paths would seem to lead out of this conundrum: nuclear power and renewable energy.

Although few would compare nuclear power to the currently favoured renewable energy sources, both types of energy have in common that they can minimise the need for fossil fuels. However, either type of energy poses additional problems.

Renewable energy sources include energy generated from solar, wind, geothermal, hydro, ocean, and biomass (biofuels) resources. The Russian 2009 energy strategy specifically mentions energy from geothermal, solar, and wind resources, along with biofuels.[81]

The use of nuclear power became increasingly distrusted after the 1979 Three Mile Island, the 1986 Chernobyl, and the 2011 Fukushima disasters. As major disasters go, comparatively few people died, yet the media impact was significant. A cool-headed (or cold-hearted) analyst may argue that the safety record of nuclear power is not so bad after all, yet for political reasons the future use of nuclear power is in doubt in several countries, which means that other sources of energy will be needed.

On the other hand, with the exception of hydroelectricity, energy production from renewable energy sources remains insignificant in the energy balance of most countries including Russia and those in Central Asia, accounting for at most a few per cent of total production.[82] Renewables, when introduced, are primarily the result of direct policy tools like subsidies and regulatory measures. Pricing alone is insufficient to promote a switch to renewable energy. The same pattern can be seen in many other types of new energy developments. High energy prices and subsidies and regulatory measures have driven investments in, for instance, coal, biofuels, and coal-to-liquids, yet without significantly increasing efficiency.

Although the surviving residue of the old Soviet command economy, in the form of state control, if nothing else, thus might, in fact, be ideal to enforce a move away from environmentally unfriendly oil and natural gas towards more wholesome renewable energy sources. Thought this seems unlikely in the short term for two reasons. First, Russia and Central Asia already have substantial energy reserves in the form of oil and gas. Second, as long as the sustained exports of oil and gas continue to bring in very substantial revenues to the state budget, it seems unlikely that the political mood would grow to encourage quite different and indeed alternative energy sources. As for Russia, the 2009 energy strategy concludes that Russia is in practical terms absent from the global renewable energy market, yet asserts that Russia will develop this sector and has the scientific potential.[83]

The Shortage of Refinery Capacity

Refinery capacity is becoming a limiting factor in many parts of the world, with the potential drastically to affect the global trade in oil products. No more oil refineries are expected to be built in Europe,

where there is a surplus of gasoline. Yet demand for middle distillates such as diesel fuel is expected to outperform that of gasoline.

In Europe, there is already a shortage of diesel fuel. Europe currently imports diesel fuel from Russia, the Middle East, and the United States. Most diesel fuel consumed in Europe comes from Russia. Besides, the volumes imported from the United States can be expected to decrease further. Imports from the Middle East might increase, but Middle Eastern diesel fuel exports to Asia are also expected to grow rapidly, which might leave Europe dependent on Russian imports. Europe thus sees a growing diesel fuel deficit. The opposite is true for gasoline. There is a surplus of gasoline in Europe, and this surplus is likely to increase. Gasoline is currently exported from Europe, Asia and the Indian Ocean region to North America. In particular the United States imports much gasoline from Europe. However, should the United States see major growth in the use of diesel fuel, then there will be a diesel fuel deficit not only in Europe but elsewhere as well.[84]

Unfortunately, Russian refineries are frequently old and substantially behind global standards. Russia will have to expand and modernise its refining facilities, which is also evident from the 2009 energy strategy.[85] Another problem is that current policies instead of encouraging investments in new refinery capacity have led to the construction of often illegal mini-refineries. Although sometimes necessary for the supply of oil products to major industries within their region, regulatory means such as domestic pricing policies and existing export duties on oil products in this case failed to encourage needed investments. Instead these policies resulted in inferior refinery capacity with an output that failed to meet technological and legal standards.[86]

These dynamics will affect Central Asia as well. There are few refineries in Central Asia, and the existing ones are old. Azerbaijan has two refineries, both near Baku, the Azerineftyag refinery and the Heydar Aliyev refinery. There are two refineries in Turkmenistan, the Seydi (Charjew) and Turkmenbashi. Uzbekistan has three refineries, at Ferghana, Alty-Aryk, and Bukhara. Kazakhstan has three refineries, at Pavlodar, Atyrau, and Shymkent, but still must import oil products for its own needs from Russia, especially middle distillates such as diesel fuel. Kazakhstan makes a good case study to illustrate the Central Asian refinery situation. In striking contrast to the upstream sector, the refining sector remained largely in the

possession of the state and never received as high levels of foreign direct investments (FDI) as other parts of Kazakhstan's energy sector. As in Russia, regulatory means such as domestic pricing policies and existing export duties on oil products hampered new investments. Domestic prices for refined products remained low, offering little incentive to produce refined products for the domestic market. The total capacity of all three oil refineries in Kazakhstan remains limited and all indeed operate far below capacity, in part because foreign oil companies prefer to export crude oil rather than to sell the oil within the country at low domestic prices.[87] Besides, the refineries are old. The Atyrau refinery, for instance, was built at the end of the Second World War.[88]

The Ubiquitous "Environment Weapon"

While discussing the use of energy as political levers in international affairs, one should not forget the more humble but no less often used "environment weapon," that is, the use of environmental arguments to prevent energy projects of which one does not approve. The Turkish Straits transit traffic has already been discussed. Several others can be mentioned, among them the following:

In 2006, Royal Dutch Shell was forced to sell its share in the Sakhalin-2 field to Gazprom since the Russian government concluded that the European company had harmed the environment.[89]

In 2007, ExxonMobil encountered similar problems in the Sakhalin-1 field, as Gazprom demanded that Sakhalin-1 gas should be used for domestic consumption and not be exported.[90]

The Nord Stream pipeline project was delayed for more than a year upon environmental grounds and the company claims to have spent more than a hundred million euros on environmental impact studies and surveys.[91]

All countries use the environment weapon against energy projects that threaten national interests. Environmental groups too eagerly join the fray, perhaps not always realising that they risk being used as pawns in games of international politics.[92] Indeed, the environment weapon may at times seem closely related to the NIMBY (Not In My Back-Yard) phenomenon, that is, opposition by residents to any proposal for new developments close to them. While most agree on the need for energy, few want such infrastructure to be built close to their homes.

Concluding Remarks

Since the energy trade between Russia and the EU remains Eurasia's key energy relationship, problems there will affect many other relationships negatively. The contradictions in EU policy mean that any list of conclusions on what ought to be done invariably will be followed by an equally long list of existing or potential problems. As for China, there are fewer policy contradictions but persistent infrastructure bottlenecks preclude Russia and Central Asia from increasing energy deliveries in volumes that correspond to China's demand. The same infrastructure bottlenecks will also hold back other energy consumers in the Asia-Pacific region in need of Russian and Central Asian energy supplies. Russia is indubitably correct in its assessment that stability in prices and demand will be necessary to justify the very substantial investments needed to develop and ship new energy reserves, in particular those of the Arctic. Unfortunately, current trends in the industry move in the opposite direction. Issues such as the yet little known costs and potential of unconventional oil and gas and renewables play havoc with any attempts to predict the future of the oil and natural gas industry.

Despite these various problems, it may be prudent to focus on the following with regard to energy policies in Eurasia:

Energy efficiency should be improved—but this is a problem for large parts of Europe with aged heavy industry, for instance Ukraine and several East European EU member states, as well as parts of Russia and Central Asia.

The share of nuclear power in the energy supply should be increased—but this is often problematic for reasons of domestic policy and decisions, in certain EU member states including Germany, that may prevent such a development.

Russia needs the EU as a market, and the EU needs Russia as an energy producer. It would seem likely that the EU can easier influence developments in Russia as a partner than an opponent—but then so could Russia with regard to developments in Europe. Besides, both will have to come to an understanding with China's need for energy and with China's often quite different priorities in international relationships and environmental policies.

The key conclusion would be that to improve fundamentally all aspects of a country's or region's energy supply and utilisation, energy

imports should be handled on a strictly commercial basis regardless of producer. Unfortunately, this tends to be problematic for reasons of domestic, often emotionally driven politics. Among them can be found the issues between exporter and transit states and persistent beliefs that energy can be used as a powerful political lever.

Apart from rhetoric, does it make sense to use energy exports as a means of political leverage against other countries? A few historical examples may throw some light upon the various issues of energy imports and dependence on others—and on how fear of dependence and indeed exaggerated views of energy dependence may influence policy in a detrimental way.

In August 1941, the United States embargoed its oil exports to Japan, which was 76.7 per cent dependent on American oil.[93] The purpose was to coerce Japan into abandoning its war in China. The embargo caused the fall of the Japanese government and became a decisive reason why Japan attacked the United States in December the same year. To antagonise a country was in this case clearly not an efficient way to influence its policy.

In 1973, OPEC embargoed its oil exports to the West to force it to abandon its support for Israel. The oil crisis hit hard but the effect became the opposite; methods were introduced to increase energy efficiency, so OPEC lost the leverage it thought it had. Western support to Israel increased. Again political leverage was illusionary and quickly lost. Besides, it would seem that no energy exporter knowing this would willingly want to create a situation that ultimately causes its exports to decrease. The dependence between exporter and importer is mutual.

A last lesson may be learned from how the view of post-Soviet Russia has changed. Today, Russia is regarded by some as too powerful. Yet, how many remember the 1990s when Russia was weak, on the point of collapse, controlled by gangsters—and the EU worried about the possibility of waves of refugees and nuclear weapons gone missing?

It is all too easy to confuse short-term tactical gains and wishful thinking with long-term strategic goals. Strategies of energy and security should be based on lessons learned as well as projections for the future. Yet, the rapid pace of technological and political change that characterises the energy sector may cause analysts and policymakers

to lose sight of the imperative to guarantee modern society's need for energy in a sustainable environment.

To conclude: "What experience and history teach is this—that people and governments never have learned anything from history, or acted on principles deduced from it."[94]

Notes

1. See, for example, Michael Fredholm, "Ryssland och hotet från Centralasien" ["Russia and the threat from Central Asia"], *Bulletinen* 2, 3; 2004; which explores certain such issues.
2. *Energeticheskaya strategiya Rossii na period do 2030 goda* ["Energy Strategy of Russia to the Year 2030"], Government of the Russian Federation Decree 1715-r, November 13, 2009, p. 13.
3. BP, *Statistical Review of World Energy,* June 2011.
4. BP, *Statistical Review of World Energy,* June 2011.
5. *Kommersant,* December 14, 2010, citing Russian President Dmitry Medvedev on December 13, 2010. Medvedev described Russia's share in the natural gas trade as "a fourth" of the total. BP, *Statistical Review of World Energy,* June 2011, calculated Russia's share of the global trade in natural gas as 20.5%. While different sources employ differing calculations and statistics, Russia's share is of global significance. Incidentally, Medvedev's figures were those cited in Russia's 2009 energy strategy.
6. BP, *Statistical Review of World Energy,* June 2011.
7. See, for example, Eurostat (European Commission), *Energy, Transport and Environment Indicators* (Luxembourg: Publications Office of the European Union, 2011); Eurostat (European Commission), *Panorama of energy: Energy Statistics to Support EU Policies and Solutions* (Luxembourg: Publications Office of the European Union, 2009). Also available on the EU web site, http://ec.europa.eu/eurostat.
8. *Energeticheskaya strategiya* (2009), 8; Eurostat, *Energy, Transport and Environment Indicators,* 40. Both rely on statistics from 2008.
9. *Kommersant,* December 14, 2010.
10. *Vedomosti,* January 20, 2011.
11. See, for example, Stefan Hedlund, "Russia as a Neighborhood Energy Bully," *Russian Analytical Digest* 100 (July 26, 2011), 2-5. Among many similar works, this one, by a researcher known for his long-standing dislike of Russian policies, interestingly makes the argument that outside actors have been complicit in allowing Russia to bully its neighbours.
12. *Energeticheskaya strategiya Rossii na period do 2020 goda* ["Energy Strategy

of Russia to the Year 2020"], Government of the Russian Federation Decree 1234-r, August 28, 2003.

13. Michael Fredholm, *The Russian Energy Strategy & Energy Policy: Pipeline Diplomacy or Mutual Dependence?* (Conflict Studies Research Centre, UK Defence Academy, Russian Series 05/41, September 2005).
14. See, for example, Michael Fredholm, "Russia and Central Asian Security," Birgit N. Schlyter (ed.), *Prospects for Democracy in Central Asia* (Istanbul: Swedish Research Institute in Istanbul Transactions, vol. 15, 2005), 97-116, on the Russian National Security Concept and Foreign Policy Concept, pieces of legislation enacted for similar reasons as the energy strategy.
15. *Energeticheskaya strategiya* (2003), 26.
16. *Energeticheskaya strategiya* (2003), 40-41.
17. *Energeticheskaya strategiya* (2003), 61.
18. *Energeticheskaya strategiya* (2003), 42-3. It was not only the energy strategy that occasionally used language reminiscent of military strategy. At the 3rd Russian Petroleum & Gas Congress in Moscow on June 21-23, 2005, Semyon Vainshtok, then president of the Russian oil pipeline monopoly Transneft, quoted the famous eighteenth-century field marshal, Count Alexander Suvorov, to make a point.
19. *Energeticheskaya strategiya* (2003), 61, 71.
20. *Energeticheskaya strategiya* (2003), 41.
21. Decree of the Ministry of Industry and Energy No. 413 of December 21, 2006, "On a refinement of the Energy Strategy of Russia for the period up to 2020 and its prolongation up to 2030."
22. *Energeticheskaya strategiya Rossii na period do 2030 goda* ["Energy Strategy of Russia to the Year 2030"], Government of the Russian Federation Decree 1715-r, November 13, 2009.
23. See, for example, *Energeticheskaya strategiya* (2009), 16, 18, 19.
24. *Energeticheskaya strategiya* (2009), 34.
25. *Energeticheskaya strategiya* (2009), 35, app. 5, pp. 23-24.
26. *Energeticheskaya strategiya* (2009), 89, app. 5, pp. 18-24.
27. *Energeticheskaya strategiya* (2009), 35.
28. Fredholm, *Russian Energy Strategy & Energy Policy.*
29. See, for example, IWPR's Belarus Reporting Service 53, March 2, 2004, for one case among many.
30. Michael Fredholm, *Natural-Gas Trade between Russia, Turkmenistan, and Ukraine: Agreements and Disputes* (Stockholm University: Asian Cultures and Modernity Research Report 15, 2008).
31. See, for example, Ariel Cohen, *Rethinking Reset: Re-Examining the Obama Administration Russia Policy,* Testimony before the US House of Representatives,

Committee on Foreign Affairs, July 7, 2011.

32. Viktor Kalyuzhny, Deputy Minister of Foreign Affairs of the Russian Federation and Russian Special Presidential Envoy for the Caspian Sea, *Statement at the Caspian & Black Sea Oil & Gas Conference 2004,* Istanbul, February 26, 2004.
33. See, for example, Colin Sutcliffe, "The Baku-Tbilisi-Ceyhan Project: Bringing Caspian Oil to the World's Markets," *BlackSea Trend Review* 1: 1 (Summer 2002), 77-81. See also "Construction Begins on the Baku-Tbilisi-Ceyhan Pipeline," *BlackSea Trend Review* 2: 4 (Summer 2003), 46-8.
34. Hakki Akil (General Director—Economic Affairs, Ministry of Foreign Affairs, Turkey), *Potential of Caspian Oil and Gas and Export Options Via the Black Sea Region and Balkans*, Caspian & Black Sea Oil & Gas Conference 2004, Istanbul, Turkey, February 26-27, 2004.
35. See, for example, *Reuters*, May 6, 1998.
36. Kalyuzhny, *Caspian & Black Sea Oil & Gas Conference 2004*.
37. Osman Saim Dinc (General Manager, TPAO), *Upstream and Downstream Oil and Gas Industry Potential in Turkey*, *Caspian & Black Sea Oil & Gas Conference 2004*, Istanbul, Turkey, February 26-27, 2004.
38. Dr. Mehmet Özkanli (President, Turkish Association of Petroleum Geologists), *Caspian & Black Sea Oil & Gas Conference 2004*, Istanbul, Turkey, February 26-27, 2004.
39. Akil (Ministry of Foreign Affairs, Turkey), *Caspian & Black Sea Oil & Gas Conference 2004*.
40. BP, *Statistical Review of World Energy,* June 2011.
41. Igor Torbakov, "Russian Gas Company Makes Concessions in Bid to Resolve Pipeline Dispute with Turkey," *Business & Economics* (www.eurasianet.org), July 9, 2003.
42. Nord Stream AG website, *www.nord-stream.com.*
43. Gazprom website, *www.gazprom.com*. There are reportedly confidential plans to delay operations until possibly as late as 2024. *RIA Novosti*, August 24, 2010.
44. Nabucco Gas Pipeline website, *www.nabucco-pipeline.com.*
45. BP, *Statistical Review of World Energy,* June 2011.
46. Stanislav Tsygankov (Head of the Department for Foreign Economic Activities, Gazprom), *Export Strategy for Russian Gas: Securing a Reliable Supply*, 7th Russian Petroleum & Gas Congress, Moscow, June 25, 2009.
47. Energy Charter Secretariat website, *www.encharter.org*.
48. A national regulatory authority (NRA) will analyse whether a company organised outside of the European Community meets the relevant conditions set forth in the Third Energy Package and will also determine if the approval of such a company to control for instance a pipeline operator (transmission system operator, TSO) would put at risk the security of the energy supply of

the European Community or of the individual member state affected thereby. For these purposes, the NRA is expected to take into account the rights and obligations of the European Community and of the affected member states with respect to the relevant third country.

49. See, for example, Andrei Bely, "After the Oil Boom: Russian Energy Investments in Europe in the Era of Recession," *Russia in Global Affairs* 7: 1 (2009), 128-38.
50. See, for example, Michael Fredholm, *The World of Central Asian Oil and Gas: Power Politics, Market Forces, and Stealth Pipelines* (Stockholm University: Asian Cultures and Modernity Research Report 16, 2008).
51. *Energeticheskaya strategiya* (2009), 97.
52. Hugh McDowell (Vice President for BP Exploration, BP Turkey), *Upstream and Downstream Oil and Gas Industry Potential in Turkey*, Caspian & Black Sea Oil & Gas Conference 2004, Istanbul, February 26-27, 2004.
53. Peter Reiniger (EBRD), *Caspian Oil & Gas Transportation*, presentation, Caspian Oil & Gas, Baku, June 8-9, 2005.
54. Andreas Ådahl and Adam Perlowski, *Sovjetunionens näringsliv* (Lund: Liber, 1978), 213-14.
55. Igor Tomberg, "Energy Policy and Energy Projects in Central Eurasia," *Central Asia and the Caucasus* 48 (2007), 38-50, on 42.
56. David Preyger and Vladimir Omelchenko, "Caspian Dilemma: How to Deliver Blue Fuel to the European Market," *Central Asia and the Caucasus* 33 (2005), 120-28, on 125.
57. Fredholm, *World of Central Asian Oil and Gas.*
58. See, for example, Fredholm, *Natural-Gas Trade between Russia, Turkmenistan, and Ukraine.*
59. *Gazprom press release*, March 11, 2008.
60. *Caspian Investor* 12: 10 (2009), 19-24. Later in the same month, the second segment and final part of the Turkmenistani part of the new Dowlatabad-Salyr Yap gas pipeline to Iran also opened.
61. BP, *Statistical Review of World Energy,* June 2011.
62. Michael Fredholm, *The Shanghai Cooperation Organization: The Latest Chapter in the History of the Great Game or the Guarantor of Central Asian Security?* (Stockholm: Team Ippeki, 2007).
63. Dow Jones, *International News,* June 4, 2004.
64. *Kommersant,* April 18, 2006.
65. *Russian Petroleum Investor* 19: 8 (2010), 7-10.
66. *Asia Times,* May 5, 2011 (www.atimes.com). On the ESPO, see also the Transneft website, www.transneft.ru.
67. *Energeticheskaya strategiya* (2009), 10.

68. RIA Novosti, March 21, 2006; "Meeting with Russian Journalists Following the Ceremonial Signing of Russian-Chinese Documents," March 21, 2006, President of Russia official web portal, *www.kremlin.ru.* A Chinese newspaper explained that the Altai pipeline would run via Novosibirisk to the Russo-Chinese border and then onwards to Urumchi in Xinjiang, where it would link up with China's West-East gas pipeline. The second pipeline would run from Sakhalin to Vladivostok and thence into China's Heilongjiang province. *Wen Hui Bao* (Shanghai), March 21, 2006 (*www.whb.com.cn*). Several details given by *Wen Hui Bao* have since been proven wrong; however, the Altai pipeline as fundamentally described here was later posted on the Gazprom website, *www.gazprom.com*.
69. Miller at the Gazprom annual shareholders' meeting, June 30, 2006 (Gazprom website, *www.gazprom.ru*).
70. *Nezavisimaya gazeta,* September 14, 2006.
71. Julian Lee, "Russia and China Fail to Reach Gas Supply Deal," *FSU Oil & Gas Advisory*, June 2011.
72. Gazprom website, *www.gazprom.com;* RIA Novosti, August 24, 2010.
73. "China's Future Energy Prospects," *Quarterly Oil Demand*, July 2011.
74. It is already ancient history that just before the onset of the 2008-2009 global financial crisis which, among other effects, resulted in a new Russian energy strategy, the demand for natural gas was so high that Russia faced a gas deficit. However, the crisis led to a reduction in industrial output that severely reduced the demand for energy, including natural gas. On the potential gas deficit, see Michael Fredholm, *Gazprom in Crisis: Putin's Quest for State Planning and Russia's Growing Natural Gas Deficit* (Conflict Studies Research Centre, UK Defence Academy, Russian Series 06/48, October 2006). On the financial crisis, see, for example, R. G. Gidadhubli, "Economic Crisis in Russia and Central Asia: Causes and Consequences," Suchandana Chatterjee and Anita Sengupta (eds.), *Communities, Institutions and "Transition" in Post-1991 Eurasia* (New Delhi: Shipra, 2011), 171-85.
75. Julian Lee, "Russia and China Fail to Reach Gas Supply Deal," *FSU Oil & Gas Advisory*, June 2011.
76. *Shanghai Daily,* July 11, 2011.
77. BP, *Statistical Review of World Energy,* June 2011.
78. *Izvestiya,* October 14, 2009; Military Doctrine of the Russian Federation, February 5, 2010.
79. *Russian Petroleum Investor* 19: 2 (2010), 48.
80. See, for example, Linda Jakobson, "China Prepares for an Ice-free Arctic," *SIPRI Insights on Peace and Security* 2, 2010.
81. *Energeticheskaya strategiya* (2009), 38-39.

82. BP, *Statistical Review of World Energy,* June 2011.
83. *Energeticheskaya strategiya* (2009), 9.
84. Michael G:son Löw (CEO, Preem AB), *presentation*, NOG seminar on energy supply changes, trends, and prospects for the future, May 18, 2011, Stockholm.
85. *Energeticheskaya strategiya* (2009), 45-6, app. 4, pp. 3-4.
86. *Russian Petroleum Investor* 19: 3 (2010), 5-7.
87. Vladimir Babak, "The Oil and Gas Sector in Kazakhstan," *Central Asia and the Caucasus* 40 (2006), 41-55, on 50-51.
88. *APS Review Gas Market Trends,* July 24, 2006 (*http://goliath.ecnext.com*).
89. *Platts International Gas Report* 566 (January 29, 2007), 8.
90. Nina Poussenkova, "All Quiet on the Eastern Front...," *Russian Analytical Digest* 33, 2008 (*www.res.ethz.ch*); "Gazprom grabs 20% of Sakhalin-1 gas," *Upstream Online*, May 5, 2009. See also, for example, Craig Pirrong, *Exxon's Sakhalin Troubles: A Redux of Shell's Sakhalin II?* (*http://seekingalpha.com*).
91. Nord Stream AG website, *www.nord-stream.com*.
92. In the case of Exxon and Sakhalin-1, for instance, the group named Pacific Environment suddenly stepped in to chastise Exxon. While doing so, the group simultaneously but perhaps inadvertently praised Gazprom. Pacific Environment identified its mission as protecting "the living environment of the Pacific Rim by promoting grassroots activism, strengthening communities and reforming international policies." *Exxon Ignores Pleas from 50,000 People to Halt Damaging Activities that Threaten Rare Whales* (*www.pacificenvironment.org*).
93. Japan's dependence on the United States was in fact yet more serious. In 1940, Japan was also 66.9% dependent on American iron imports, and 66.2% dependent on American machine tools. As for oil, 24.9% of imports came from the Dutch East Indies and only 8.8% from other sources.
94. Georg Wilhelm Friedrich Hegel (1770-1831), *Philosophy of History* (1832), Introduction.