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## **RUSSIAN GAS IN CHINA**

Complex Issues in Cross-Border Pipeline Negotiations

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## 1. Introduction

The Russian Far East needs a development plan, and starting exports of natural resources to the Asia-Pacific region might become such a project. There are substantial reserves both in West and East Siberia and the Far East that can serve as a resource base for Russian exports to the Asia-Pacific region. Russia is the largest gas reserves holder in the world; as much as 140 bcm/a, about 16 percent of its total output, will be produced in East Siberia and the Far East by 2030.<sup>2</sup> The Eastern Gas Programme<sup>3</sup> focuses on the development of the resources of East Siberia and the Far East and the possibilities of gasification of the Russian regions, as well as exports to the Asian Pacific countries.

China has historically pursued a policy of self-sufficiency in energy resources, and until as recently as 1993, it did not import oil.<sup>4</sup> However, a sharp increase in demand resulted in the increase of imports – hence China became a net importer of fossil fuels. Since 2006 the consumption of gas has surpassed domestic production – so despite the fact that China has the capability to increase domestic production, liquefied natural gas (LNG) and pipeline gas imports will become essential for China in the near future. In the beginning of the decade, gas constituted about 3.4 percent in China's fuel mix.<sup>5</sup> At present, natural gas constitutes 3.7 percent of primary energy consumption having grown more than twofold in absolute terms in the last ten years.<sup>6</sup> One of the objectives of the new energy policy is to gradually decrease the share of coal and simultaneously increase the share of gas in the fuel mix, which will result in even higher demand for gas in China.<sup>7</sup>

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<sup>2</sup>Russia's Energy Strategy to 2030. <http://www.energystrategy.ru/projects/es-2030.htm> (25.11.2009), Annex #4, 5.

<sup>3</sup> Programme of Resource Development in East Siberia and the Far East. <http://gazprom.ru/f/posts/14/883279/program.doc> (27.10.2009)

<sup>4</sup>Bekker, Segers, Zhang, *Energy in China: An introduction to China And Its Contemporary Energy Situation* (Groningen: Energy Delta Institute / Castel International Publishers, 2007), 49.

<sup>5</sup>David Fridley, 'Natural Gas in China', in Ian Wybrew-Bond and Jonathan Stern (eds.), *Natural Gas in Asia: The Challenges of Growth in China, India Japan and Korea* (Oxford: Oxford University Press, 2002), 8.

<sup>6</sup>BP, *Statistical Review of World Energy*.

<sup>7</sup>Bekker, Segers, Zhang, *Energy in China*, 35-36.

Two countries, having a common (and settled) border still have not reached a seemingly logical agreement concerning gas trade. An important question is therefore: what are the key factors that are impeding the reaching of an agreement between Russia and China concerning pipeline gas trade?

## 2. Analytical framework

To deal with this complex question, it is essential to have a framework of reference, i.e. the analytical framework. Given the specifics of the case in question (perspectives for Russian-Chinese natural gas pipeline), we should refer to a study concerning pipeline development. For the purpose of our paper, which is to determine the key (and decisive) elements for the postponement of the decision, it seems logical to refer to the analysis of the difficulties for cross-border pipelines rather than a study of Russian-Chinese energy relations.<sup>8</sup> Such a discussion is provided by the World Bank's 2003 Report *Cross Border Oil and Gas Pipelines: Problems and Prospects*.<sup>9</sup>

The report draws on the understanding of the three main results of the special characteristics of the cross-border gas pipelines: (1) the participation of different actors with different interests; (2) the general absence of the overarching legal jurisdiction to guard and regulate activities and the implementation of the contracts; (3) rent has to be shared among various parties.<sup>10</sup>

There are two major aspects to be taken into account: the pipeline itself (or, more specifically, the economics of the pipeline) and the nature of the cross-border trade.<sup>11</sup> Pipeline economics have five main characteristics: economies of scale, the long life of specific projects; state involvement; the pipeline's place in the longer value chain; the pipeline's susceptibility to market failure.<sup>12</sup> The cross-border trade has important implications, such as the necessity to establish contracts in order to determine property rights, and the operation of the pipeline between two different legal and regulatory

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<sup>8</sup> An example of which could be Vasily Mikheev (ed.), *Northeast Asia: Strategies of Energy Security* (Moscow: Carnegie Endowment, 2004) [In Russian]

<sup>9</sup> ESMAP, *Cross Border Oil and Gas Pipelines: Problems and Perspectives* (Washington, D.C.: UNDP/WB, 2003).

<sup>10</sup> *Ibid.*, 10.

<sup>11</sup> There could be a third element of the nature of transit trade, but since the scope of this paper (perspective for gas pipeline from Russia to China) does not include the transit country, we will leave this aspect out of discussion.

<sup>12</sup> ESMAP, *Cross Border Oil and Gas Pipelines*, 15.

regimes – meaning that the overall problem that exists in the cross-border trade is the absence of a supranational authority, or overarching jurisdiction.<sup>13</sup> According to the World Bank report, the consequences are as follows:<sup>14</sup>

1. There is no obvious mechanism for conflict resolution;
2. There is a natural conflict of interests between buyer and seller;
3. Reconciling different legal and regulatory regimes implies additional transaction costs;
4. Importers become vulnerable to the possibility of the denial of supplies, and exporters become vulnerable to the denial of their market;
5. The nature of the gas market can differ between the countries connected by pipeline (levels of competition; price regulation).

Some of the issues highlighted can be dealt with by means of supply contracts. The form of a long-term contract that is widely used today was developed in the 1960s for the export of natural gas from the Netherlands to Western European countries. This includes such elements as seller's commitment to gas availability and buyer's commitment to long-term minimum pay;<sup>15</sup> therefore consequences 2 and 4 can be addressed in a bilateral long term gas supply agreement. The following obstacles remain: mechanism(s) for conflict resolution; different legal and regulatory regimes; and the nature of the gas market.

Based on this discussion we now can propose three hypotheses:

*With regard to Russian-Chinese negotiations concerning the possibility to build one or several pipelines a key question is:*

1. *The price formula. The price for gas has to be competitive on the Chinese market, yet it has to be high enough to justify investment in upstream development, infrastructure construction and compensation for depletion.*

2. *The difference in internal jurisdictions concerning cross-border trade which adds to the transactions costs increase.*

3. *The absence of an overarching regime for cross-border trade in natural resources and especially a lack of dispute-settlement mechanism.*

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<sup>13</sup> ESMAP, *Cross Border Oil and Gas Pipelines*, 20-21.

<sup>14</sup> *Ibid.*

<sup>15</sup> ESMAP, *Long-Term Gas Contracts: Principles and Application*, Report No.152/93 (Washington, D.C.: UNDP/WB, 1993), 33.

These hypotheses will be addressed in sections 4, 5 and 6. In section 3, the initial assessment of the economics of particular projects will be discussed.

### 3. Economics of the pipeline projects from Russia to China

As already has been mentioned before, there are two pipeline projects from Russia to China – One to North-West China, and one to North-East China (see Figure 1). The Altai pipeline is planned to go through Barnaul, Biysk and Gornoaltaisk toward Urumqi in Xingjian province along the automobile road, without crossing territories of any other countries. The pipeline could pass the Utok plateau, and there are no technical complications neither to the construction of the road, nor to the construction of the pipeline (according to a group of geologists from the Russian Academy of Science).<sup>16</sup> The proposed size of the pipeline is 1420 mm, and proposed capacity is 30 bcm annually.<sup>17</sup> With regard to the strategic importance of the pipeline for Russia and particularly the Altai region, assuming that the plans for affiliated local distribution network will be pursued, the project has the potential to play a large role in reforming the pattern of consumption in the region which is now dominated by coal. Development of gas use accompanying the export pipeline project will contribute to improvement of the general ecological situation in Altai region and will allow for cuts in CO<sub>2</sub> emissions. The above mentioned Utok plateau, however, is a valuable field for archaeologists<sup>18</sup> – so there could be some difficulties with actual construction of the pipeline due to cultural considerations.

The second is the pipeline to connect the Russian Far East with China's North-Eastern provinces. The priority within the Eastern Gas programme was given to the Western Route, i.e. the Altai project,<sup>19</sup> and so there are no technical specifications available concerning the Eastern Route. Despite this priority, the following factors highlight the importance of the Eastern Route to Russia. Firstly, there is currently smaller room for Russian gas in China's west after the opening of Turkmenistan-Uzbekistan-Kazakhstan-

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<sup>16</sup> Dobretsov et. al. The Altai Pipeline and the Perspectives for Russian Exports to the Asia-Pacific Region and Transit Regions Ddevelopment, in *Far Eastern Affairs* N3, 2007, 97.

<sup>17</sup> Gazprom, *Gazprom Delegation Visits China*. October 13, 2009.

<http://gazprom.com/press/news/2009/october/article69166/> (25.07.2010)

<sup>18</sup> Dobretsov et. al. The Altai Pipeline and the Perspectives for Russian Exports to the Asia-Pacific Region and Transit Regions Ddevelopment, in *Far Eastern Affairs* N3, 2007, 99.

<sup>19</sup> Gazprom, *Altai Project*. <http://www.gazprom.com/production/projects/pipelines/altai/> (20.07.2010)

China pipeline (in December 2009) with a projected capacity of 60 bcm. Local consumption in the North-West is not large enough to absorb another 30 bcm of Russian gas; the capacity of the West-East Pipeline (WEP) is 17 bcm annually. Although a second 30 BCM/a pipeline (to Guangdong province) is currently under construction, its capacity has already been reserved for the distribution of Central Asian imports. Therefore, if Russia wants to pursue the idea of gas exports to China, it should also consider the Eastern Route.<sup>20</sup> Secondly, there is a demand growth potential in North-East China, which would receive natural gas from the Russian Far East. The characteristic feature of the three provinces in the North-East of China (Heilongjiang, Liaoning, and Jilin) is the level of industrial development. Historically, it is these three provinces that used to be the industrial cradle of the 'New China'<sup>21</sup> – they played a major role in industrial development in the 1960s and 1970s. According to the 2003 region development plan, the purpose is to further develop and modernise the industry in the region, and the energy is going to play an essential role in achieving this objective.<sup>22</sup> These two reasons suggest that it would be more promising in current circumstances to focus on the eastern route.

Both Russian and Chinese markets on the national level employ the *cost-plus principle*.<sup>23</sup> In Russia, the distribution infrastructure is owned by Gazprom. There are independent producers of natural gas, but most of the time it is complicated to sell the gas directly to end-user and independents have to sell their gas to Gazprom. The wholesale price is regulated through Gazprom by the government. The regulation of prices is based on cost-plus principle. (The successful pilot project of an electronic gas trading platform "Mezhregiongaz" installed by Gazprom awaits further legislation to be installed on a permanent basis.<sup>24</sup>)

In China, the price paid by the consumer includes the following elements: ex-plant price (controlled by the central government and determined for each gas field and

<sup>20</sup> Mironova, Irina. 'Russia and China – An Overview of the Developments on the Gas Fronts' in *Eurasia Energy Observer* (N39, March 13, 2010), 1.

<sup>21</sup> China vows to revitalize northeastern industrial base. [http://www.gov.cn/english/2003-08/13/content\\_23616.htm](http://www.gov.cn/english/2003-08/13/content_23616.htm) (25.11.2009)

<sup>22</sup> Hwy-tak Yoon, China's Northeast Project: Defensive or Offensive Strategy? in *East Asia Review* Vol.16 No. 4, winter 2004, 100-101.

<sup>23</sup> The 'cost-plus principle' determines the price paid by the end-user; based on costs of production, transportation and distribution of the resource. The alternative is 'net-back pricing'. Using this principle, the end-user price is determined by the replacement value of competing fuels. As a result the price of gas at the delivery point is the end-user price, less transportation and distribution costs.

<sup>24</sup> In 2008, the amount of gas marketed through the electronic trading platform amounted 6.1 bcm. Source: Gazprom, *Marketing: Russia*. <http://www.gazprom.com/marketing/russia/> (18.09.2010)

differentiated depending on the final customer); transportation tariff (controlled by the central government and principally determined by the distance); end-user price (controlled by the local government).<sup>25</sup> Thus, the essence is cost-plus basis. Overall, the end-user price paid by consumers in China does not provide sufficient incentive for exporting states to build pipelines to supply the Chinese market, despite its fast economic growth. According to the IEA study, at the end of 2008 China had total proven reserves of 5.94 tcm, of which 3.09 tcm were classified as technically and economically producible reserves.<sup>26</sup> BP's estimation is that China obtains 2.46 tcm, or 1.3 percent of world's proved gas reserves.<sup>27</sup>

For exporters, it is in general more attractive to use the principle of determining the price level based on the price of competing fuels in consuming market. This will allow Russia to receive maximum rent from gas sales in this particular market. This could further be developed if there is a competitive market for Russian gas in the target gas consumption region. Since Russia wants to maximize its rents, it is logical to use the net-back principle based on the price for competing fuels in the consuming market. And it is the consuming market where the problem lies in this particular situation. As has been noted before, the competing fuel in China is most of the times coal (except for some industries which are using oil) and gas produced domestically. Given domestic supplies and lower prices for coal, gas import prices have to be low to make gas competitive on the Chinese market. There is a possibility that following the development of unconventional gas production, internal price will become higher due to more complex exploration and production processes; however, this is an unclear perspective, with possibility of large scale production of unconventional gas beyond 2020.<sup>28</sup> In this respect it is important that from 1 June 2010 the NDCR decided to increase prices by 25% to RMB 1 115 (\$169.1) 1000m<sup>3</sup> with a view to boost domestic output.<sup>29</sup> Thus the essence of the problem which has impeded the negotiations on gas supplies between Russia and China for the past several years is the fact that the future of the Chinese gas market appears unclear from a supplier's point of view.

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<sup>25</sup> IEA, *Natural Gas in China: Market Evolution and Strategy* (Paris: OECD/IEA, 2009).

<sup>26</sup> IEA, *Natural Gas in China*, 6.

<sup>27</sup> BP, *Statistical Review of World Energy*.

<sup>28</sup> Carola Hoyos, China Gas Growth to Hit West, in *Financial Times*, July 26, 2010. Important thing to remember in this respect is that the geology in the United States and elsewhere in the world where shale gas can theoretically be produced is different. In case of China, the layers are deeper and therefore gas cannot be produced as easily and will require more time and more complex technology.

<sup>29</sup> *Gas Matters*, July-August 2010, 11.

To conclude this section, some observations are relevant:

1) It is likely that during the new round of negotiations to take place between Gazprom and CNPC in September, both Eastern and Western routes will be pursued, although it does seem more promising to focus on the Eastern route.

2) In the Russian-Chinese case, there will certainly be some government involvement as far as the cross-border gas pipelines are concerned. For Russia, the Eastern Gas Programme represents a project of strategic importance – it appears in the Energy Strategy to 2030 as one of the vectors of the development of Russian energy sector, including both internal and international dimensions.<sup>30</sup> For China, increasing the share of natural gas in total primary energy supply is a strategic objective, according to the Eleventh Five-Year Plan.<sup>31</sup> This means a higher level of political commitment of the parties to a cross-border project, but in the case of China only if its objective of increased share of natural gas is not achieved by domestic production.

3) With prospective pipelines built, can we refer to the case of gas market integration? In the Russian-Chinese context it is a difficult question. One thing that defines the market is competition, and there could hardly be any discussion of competition when it comes to domestic levels: although there are independent producers in Russia, they have limited access to infrastructure which means that the main distribution company is Gazprom; and the absence of competition in China. On the other hand, competition of pipelines to supply Chinese market is already a reality (prospective Altai versus an already functioning Turkmenistan-China pipeline).

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#### 4. Governments and rents

What can the exporting state earn from selling its gas? One principle is the Ricardian rent which entails the marginal cost of supply and does not count the finiteness of the resource. Since there are differences in the characteristics and the quality of fields, as well as their geographical proximity to the markets, the rent is differential. By contrast the Hotelling rent results from determining the price of the resource based on the cost of replacement with the competing fuel. Resource rent as such can be counted as a sum of

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<sup>30</sup> *Russia's Energy Strategy to 2030*. <http://www.energystrategy.ru/projects/es-2030.htm> (25.11.2009) [In Russian]

<sup>31</sup> *The Outline of the Eleventh Five-Year Plan for National Economic and Social Development of the People's Republic of China*. [http://en.ndrc.gov.cn/hot/t20060529\\_71334.htm](http://en.ndrc.gov.cn/hot/t20060529_71334.htm) (28.07.2010)

Ricardian rent and Hotelling rent, thus being a result of the different cost of supply from different fields plus the exceeding value to the customer.<sup>32</sup>

Tax is a way for governments to retrieve rent. In the producing state, the tax is imposed at several stages directly or indirectly – including extraction tax; excise tax (abolished in Russia in 2004); value added tax; export duty; income tax; tax on foreign economic activity.

It is argued that Russian tax policy is of fiscal character with the overall purpose to maximize budget income<sup>33</sup> and restrict producer profitability despite increasing prices in the domestic market.<sup>34</sup> Extraction tax (the only direct tax) in Russia is not the same as in such gas producing states as Canada, the United States, Great Britain, Norway and the Netherlands, where a differentiated system of taxation is employed (accounting for geological characteristics of gas reserve, volume and quality of gas plus a tax on CO2 emissions). In Russia, an undifferentiated tax is imposed on all gas producers.<sup>35</sup> The export tax is determined on the basis of the market price for gas and the actual volumes of exported gas on a monthly basis. Thus, there are two points of taxation in Russia: at the well-head (extraction tax) and at the border (export tax).

In China, the imported gas is also subject to taxation. The State Administration on Taxation in charge of the Central taxes, to which value-added tax (VAT) of 13 percent and import duty are attributed.<sup>36</sup> Although the pipeline gas import tax is to be increased, the rule of two-year exemption and three-year reduction can be applied,<sup>37</sup> meaning that the import gas could still be priced at the same level as gas produced domestically for the first five years. The energy strategy focuses on resource exploration (both at home and abroad), extending its pipeline infrastructure and improving efficiency of energy generation. Domestically, the policy objectives include:

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<sup>32</sup> For more information and discussion, see ECS, *Putting Price on Energy: International Mechanisms of Oil and Gas Price Formation* (Brussels: ECS, 2007), 44-50. [In Russian]

<sup>33</sup> Golub A., Markandia A., Strukova E., *The Problems of Retrieving Rent Taxes*. <http://www.xserver.ru/user/prird/> (12.07.2010) [In Russian]

<sup>34</sup> Jonathan Stern, *The Future of Russian Gas and Gazprom* (Oxford: Oxford Institute for Energy Studies, 2005), 57.

<sup>35</sup> At 147 roubles, or appr. 5 EUR per thousand cubic meters of produced gas. Source: *Tax Code of the Russian Federation*, Article 342, clause 1, para 12. <http://base.garant.ru/10900200/> [In Russian]  
It has been proposed to increase the extraction tax fivefold.

<sup>36</sup> Beijing Local Taxation Bureau. *Overview of China's Tax System*. <http://english.tax861.gov.cn/zgszky/zgszky.htm> (01.09.2010)

<sup>37</sup> Yamaguchi, Kaoru, and Keii Cho. *Natural Gas in China*. IEEJ, 2003. <http://eneken.ieej.or.jp/en/data/pdf/221.pdf> (05.07.2010)

- Reduction in energy intensity;
- Decrease the proportion of coal in total energy consumption;
- Ensure sufficient supplies through domestic production and foreign investment;
- In gas, the strategy is to expand domestic production and demand, increasing the share of natural gas in the fuel mix.<sup>38</sup>

The Chinese government has been careful with setting the price levels for natural gas, since in order to ensure growing demand in power and residential sectors it has to be compatible with other fuels. As a result the approach of differential treatment of sectors remains.<sup>39</sup> In the power sector the dominant fuel is coal, and with China's abundant domestic resources the power sector has not been eager to switch to more expensive natural gas. Moreover, in areas of coal production it actually is not permitted to build gas fired power plants. There are four categories of gas use, according to the principle of optimising gas consumption structure: preferred, permitted, restricted and forbidden.<sup>40</sup> The policy document is a result of surge in natural gas demand in China in the past decade, and aims to balance demand and supply in the domestic market (see figure 4). There are various statements aiming at limiting CO<sub>2</sub> emissions by reducing share of coal in the energy mix and reducing energy intensity of the economy. These measures, however, are not aimed at reducing the use of coal. This has an important implication in understanding Chinese policy: it might appear that the energy policy aims to *replace* coal with gas; in fact, the policy objective is one of *balancing* domestic supplies and imports of both coal and gas with demand, based on comprehensive social, environmental and economic benefits.

There is no obvious way to divide rent along the value chain. An effective way of coordinating risks and rents bilaterally could be to allocate them throughout the gas value chain and assign long-term commitments.<sup>41</sup> In this context it is possible to make a distinction between the factors that both seller and buyer are involved in, and factors that are exclusively assigned to one of the parties. A traditional long-term contract typically includes the following elements:

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<sup>38</sup> Bram Buijs, *China, Copenhagen and Beyond: The Global Necessity of a Sustainable Energy Future for China* (The Hague: Institute Clingendael, 2009), 24; IEA, *Natural Gas in China: Market Evolution and Strategy* (Paris: OECD/IEA, 2009), 9-10.

<sup>39</sup> IEA, *Natural Gas in China* (Paris: OECD/IEA, 2009), 10.

<sup>40</sup> Hao Zhou, NDRC Releases Natural Gas Utilization Policy, in *China Daily*, September 4, 2007. [http://www.chinadaily.com.cn/bizchina/2007-09/04/content\\_6080128.htm](http://www.chinadaily.com.cn/bizchina/2007-09/04/content_6080128.htm) (28.07.2010)

<sup>41</sup> Aad Correljé, Dick de Jong, and Jacques de Jong, *Crossing Borders in European Gas Network: The Missing Links* (The Hague: CIEP/Clingendael, 2009), 37.

1. The parties in the contract;
2. The rules of handling the contract;
3. The commitments of the partners outside the deal in question;
4. Commercial aspects of the deal:
  - Commitments of each side to invest;
  - Balance of commitments in the following aspects: gas flow, money flow, information flow;
  - Technicalities.<sup>42</sup>

The value chain is split between the seller and the buyer by the delivery point. It is essential that the balance of commitments is maintained through the contract.

It would seem logical that the contractual framework concerning gas trade should include documents securing the risks along the gas value chain. Most of the risks are of financial nature and therefore have an influence on the value of gas (cost for the end user and rents for the producer) and have to be attributed to a certain link of a value chain. The international agreements refer to the risks that both parties are involved in, while the national regulation / state control measures refer to the factors that present risks on a unilateral basis. Moreover, higher transactions costs of building and operating a pipeline can be caused by the differences in legal and regulatory regimes,<sup>43</sup> thus causing the rise in the cost of gas supplies.

One issue that has to be addressed is the possibility of competition for Russian Eastern gas reserves. In China there are different price levels, this is caused by two factors: differences in economic situations and the proximity of gas reserves (the latter is important because of the cost-plus based price formula). The target regions for Russian gas are: North-West (Western route) and North-East (Eastern route). In the North-West, imported gas has to be able to compete with the low priced local gas, or be transported to the East and South-East and be able to compete with higher prices there (but given the transport costs, the import price at the border still has to be affordable and must compete with domestic gas to the South-East). In the North-East, there is very limited local gas production and thus the prices could theoretically be higher. However, the region is not likely to be able to afford a high price for gas given current economic

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<sup>42</sup> ESMAP, *Long-Term Gas Contracts*, 31.

<sup>43</sup> ESMAP, *Cross Border Oil and Gas Pipelines*, 20.

situation. It can be concluded that there is a fair chance of competition for natural gas produced in the Russian East between the Russian and the Chinese regions.

The following observations and tentative conclusions can be made at this stage:

1. Governments benefit from the gas trade; the rents are retrieved in form of tax. Logically, the producing state gains the main share of rents because it has to be compensated for the depletion of the finite resources. Russia receives extraction tax and export tax, as well as a range of indirect taxes. The Chinese government has several taxes on imported natural gas; however, the tax regime could be relaxed for the first five years of the operation of the project (particularly, the import duty).

2. *Hypothesis 1: With regard to Russian-Chinese negotiations concerning the possibility to build one or several pipelines a key question is the price formula. The price for gas has to be competitive on the Chinese market, yet it has to be high enough to justify investment in upstream development, infrastructure construction and compensation for depletion.*

The price level is a result of market conditions (competing sources of supply / competing receiving markets / competing and substitute fuels) and taxes and regulations both in exporting and receiving countries. The price formula reflects those aspects – the rents and the security considerations. This leads us to the conclusion that the price formula must be found in any case should there be mutual interests in cross-border pipeline. At the same time, despite being necessary, the price formula itself is not sufficient for making the final decision concerning the pipeline project.

3. *Hypothesis 2: With regard to Russian-Chinese negotiations concerning the possibility to build one or several pipelines a key question is the difference in internal jurisdictions concerning cross-border trade which adds to the transactions costs increase.*

Although the legal frameworks do matter, essentially the risks associated with domestic regulations and interference of the other government can be handled through the provisions of the long-term contract. Since the cross-border pipeline project in the Russian-Chinese case could only start based on a long-term contract (by nature of a pipeline; in absence of a competitive market on the receiving end and in absence of competing destination for Russian gas from fields in question), it is necessary that the risks arising from domestic regulations concerning the gas sector will be secured through that contract.

## 5. Companies and risks

Governments are not the only participants that receive rents from natural gas production and export. Companies that are in charge of production and export are also able to receive part of the rent. It is beyond the scope of this paper to discuss the profits of the CNPC that are received as a result of activities in import of energy resources. However, the fact that the government has relaxed the tax conditions for gas imports (discussed in the previous section) is a relevant observation in this respect.

The case of Gazprom, however, will be dealt with in more detail. It was stipulated (by Government decision of Nov. 2006) that to find the appropriate level for internal gas prices in Russia, the net-back principle from export markets should be used:<sup>44</sup>

$$P_i = P_e - C_{tr} - T$$

Where:  $P_i$  is internal price;  
 $P_e$  is export price;  
 $C_{tr}$  is cost of transportation;  
 $T$  is export tax.

Based on an export price in 2009 of approximately \$300 per thousand cubic meters,<sup>45</sup> average transportation costs of approximately \$40, and a 30 percent (or \$78) export tax, Gazprom's net back earning at the border would be \$182. This compares with an internal price in 2009 of 2391 roubles,<sup>46</sup> or approximately \$79, showing a considerable gap. Assuming that domestic prices are now cost recovering (which will obviously strongly depend on how the costs of the written off pipelines are taken into account) the export earnings would leave a substantial room to pay dividend and to finance new investments, e.g. for new export pipelines.

The rent is spent on investment with the approval of the Russian government, which has a 51 percent share in the company. When considering the investments into new projects, the net present value of these projects will be taken as a yardstick by the investing parties (Gazprom and the Government as the holder of the resources but also in its

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<sup>44</sup> Formula derived from Kuzovkin, Assessment of the Export Tax in Conditions of Equal Profitability of Exports and Internal Sales, in *Microeconomics*, 2008, N6, 39. [In Russian]

<sup>45</sup> BP, *Statistical Review of World Energy*.

<sup>46</sup> Federal Tariff Service of the Russian Federation, quoted by RIA Novosti

capacity as a 51% shareholder of Gazprom). While in general the cheapest transport solution will be looked at, the impact of uncertainties concerning the reliability of a transport /transit solution and its start will play a role as well which may make more expensive but more reliable and earlier available transport solutions more favourable.

The rents are shared between the government and the company. The risks are shared, too. In table 1, the major risks concerning cross-border gas pipeline and possible instruments to mitigate them are presented.

**Table 1. Risks<sup>47</sup>**

Volume risk	Contract
Price risk	Contract
Risk of interrupted gas flow	Contract
Risk of interrupted gas flow / case of monopolistic pipeline	Supranational Regulation
Risk of non-payment upon delivery	Contract / <i>Pacta sunt servanda</i>
Environmental threat	National regulation
Risk of non-performance of companies	Government shares, cross participation
Risk of project non-performance	Contracts + supranational dispute settlement

Both Gazprom and the CNPC have attempted vertical integration (involvement in all parts of the value chain). Gazprom has attempted to integrate into the downstream market as far as possible. It is seen as a strategic objective for Gazprom to directly participate in infrastructure development in such countries as China, Mongolia, Korea, and Japan.<sup>48</sup> China has attempted to secure supplies by moving upstream and securing certain oil and gas fields. Vertical integration in this case, as well as in general, is a measure of risk hedging. Alternatively it can be achieved through respective provisions in the contracts. While the vertical integration needs investment protection and a non-discriminatory access to the sector activity, a contractual solution needs a dispute settlement mechanism across the borders and business partner on the other side of the border able to fulfil its contract obligation over the lifetime of the contract.

<sup>47</sup> Own compilation, based on ESMAP, *Cross Border Oil and Gas Pipelines*.

<sup>48</sup> Dobretsov et. al. The Altai Pipeline and the Perspectives for Russian Exports to the Asia-Pacific Region and Transit Regions Development, in *Far Eastern Affairs* N3, 2007, 95.

One tentative conclusion can be made: Risks are allocated along the value chain, which is divided by the delivery point between upstream (area of responsibility of the supplier) and downstream (the responsibility of the consumer). On both sides, there are several actors involved: in the Russia-China case these are the governments and the major corporations; Gazprom and the CNPC. Risks as well as rent on the respective side of the value chain are therefore shared between the government and the corporation.

## 6. Conflict resolution and investment protection

While there is a natural conflict of interests between buyer and seller currently there is no obvious mechanism of conflict resolution.<sup>49</sup> The potential consequences of the lack of such a regime include: reconciling different legal and regulatory regimes resulting in increasing transaction costs for building and operating the pipeline. Importers become vulnerable to the decision by suppliers to stop supplies, while suppliers become vulnerable to consumers refusing to take the supplies. In a situation when there is not enough competition, if the allocation role is not transferred to the jurisdiction of a supranational body (like the EU) there is a potential for misallocation of resources.<sup>50</sup> Generally (as a matter of common understanding) such a regime should concern itself with three main areas: cross-border trade; facilities needed; and investment. In our case the areas of reference will be cross-border trade and investment. Concerning cross-border trade, the main aspect must be a conflict resolution mechanism; concerning investment, an investment protection mechanism is required.<sup>51</sup>

This brings us to the question if the Energy Charter Treaty (ECT, signed in 1994) could be an option for such a jurisdiction in this particular case because it does contain provisions on a dispute settlement mechanism, as well as an extensive system of investment protection. Moreover, the ECT is the only document which specifically regulates international trade in energy. It uses the World Trade Organisation (WTO) provisions by reference.<sup>52</sup> A major reason why a specific framework is needed for energy trade is because of national sovereignty over natural resources, including energy

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<sup>49</sup> ESMAP, *Cross Border Oil and Gas Pipelines*, 20.

<sup>50</sup> *Ibid.*, 20-21.

<sup>51</sup> In case of Russia and China, it is questionable whether we can talk about an *overarching regime* however, since there could logically be no discussion of these countries giving up a part of their sovereignty in order to have a supranational authority handling disputes.

<sup>52</sup> Yulia Selivanova, *Trade in Energy: Challenges for International Trade Regulation*. [http://www.wto.org/english/res\\_e/publications\\_e/wtr10\\_11june10\\_e.htm](http://www.wto.org/english/res_e/publications_e/wtr10_11june10_e.htm) (20.06.2010)

resources.<sup>53</sup> The legally binding basis is what makes the ECT attractive as a possible framework (at least a framework of reference).

Despite the fact that the ECT does provide a certain ‘minimum standard’ for security in energy trade,<sup>54</sup> it is not very feasible that it will actually be used by the two countries – because China is an observer state and Russia terminated provisional application of the Treaty in summer 2009, following the Ukrainian gas crisis the consequences of which could not be prevented by the Treaty’s dispute settlement mechanism. It added to the previous problems Russia had with the ECT: the long-lasting difficulties to work out the Transit Protocol (the absence of which was one reason for postponing again to deal with ratification in 2001), and the absence of an agreement with European policy concerning trade in nuclear materials (which became more acute with the EU enlargements of 2004 and 2007).<sup>55</sup>

It has also been suggested by Russia that, ‘the existing energy sector governance system is tilted towards one group of energy import dependent consumer interests’.<sup>56</sup> Problems of the ECT, on the conceptual basis, might also include the following elements:

- 1) The Charter was created as a tool for fostering trade between former Eastern bloc states and Western Europe (principally export of energy resources from East to West). Conditions changed, the Treaty should change too. With regard to investment, it has to be mentioned, however, that its investment protection has two dimensions – it could also protect Russian investment in Europe, so in that sense the provisions are symmetric between producers and consumers reflecting the new reality.
- 2) After Russia stopped provisional application, other countries, in particular from Central Asia, are seeking ways to find a common ground with Russia, and the ECT is no longer an option. However, it is important to remember that Russia did not fully withdraw from the EC process all together – it just decided to stop

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<sup>53</sup> General Assembly resolution 1803 (XVII) of 14 December 1962, "Permanent sovereignty over natural resources". <http://www2.ohchr.org/english/law/resources.htm> (05.07.2010); Energy Charter Treaty Art.18.

<sup>54</sup> André Mernier, *Debating the Charter at the Energy Committee of the Russian State Duma* (A speech at the Russian State Duma, December 7, 2006), [http://www.encharter.org/index.php?id=59&id\\_article=16&L=0](http://www.encharter.org/index.php?id=59&id_article=16&L=0) (05.07.2010) [In Russian]

<sup>55</sup> Ministry of Foreign Affairs of the Russian Federation, *Russia’s Position Concerning the Energy Charter*. <http://www.ln.mid.ru/ns-dipecon.nsf/fc2e4121e6d9ec5343256a0c003fb7d2/31932f6b79c920bfc32573300035fe8a?OpenDocument> (19.07.2010)

<sup>56</sup> Christof van Agt, *Tabula Russia: Escape from the Energy Charter Treaty*, 11.

provisional application, while still participating in the discussions and all Central Asian Republics have ratified the ECT and are bound by it unless they de-ratify.

“Russia’s vital economic interest now appears to accord more with those of the growth economies in Asia, such as China [and other countries] which [are] gathered in the Shanghai Cooperation Organisation (SCO), than with those of the OECD”.<sup>57</sup> There is only limited trade in energy resources within the SCO: former Soviet countries exported 539 tb/d of crude oil to China in 2009, which is a small amount compared with their collective export to Europe of 7043 tb/d and China’s total imports of 4086 tb/d.<sup>58</sup> As far as gas is concerned, only 36 bcm was traded within the SCO;<sup>59</sup> however, there is room for development with China’s interests in new pipelines and LNG imports.

The logical conclusion could be to look for a framework in the regional organizations that Russia and China are both parties to, such as the SCO. There is a *de facto* development of the SCO common energy market,<sup>60</sup> however any structured framework is lacking. There is no legally binding framework on energy but the ECT. It seems essential, however, to still have the framework worked out on a regional basis. Moreover, the Energy Charter was once called the European Energy Charter underlining the regional origin of the initiative. It seems that while stretching the limits of the Treaty, its character has to become more general, and more holistic, thus limiting the number of provisions that could potentially be legally binding – thus losing prominence of the most important feature inherent to the document.

In conclusion, the following observations can be made:

1. *Hypothesis 3: With regard to Russian-Chinese negotiations concerning the possibility to build one or several pipelines a key question is the absence of the overarching regime for cross-border trade in natural resources and especially a lack of dispute-settlement mechanism.*

As it has been discussed earlier, concerning possibility of building a pipeline agreement the price formula is still lacking in the negotiations between Russia and China. Behind the missing agreement on the price formula beyond a missing understanding how to share the rent there could well be a difference in the perception of risks – or the lack of

<sup>57</sup> Christof van Agt, *Tabula Russia: Escape from the Energy Charter Treaty*, 12.

<sup>58</sup> BP, *Statistical Review of World Energy*.

<sup>59</sup> *Ibid.*

<sup>60</sup> Vadim Kuzmin and Irina Mironova, *Fossil Fuels in the SCO: A Binding Factor, or an “Apple of Discord”?* (forthcoming).

agreement about the costs for securing those risks. In this light, it seems essential to have a mechanism that would give certain principles to risk management; in other words, an ‘overarching regime’ that would simplify finding the common starting ground. Therefore, this hypothesis can be accepted.

2. The question then arises, *whether the ECT can serve as such an overarching mechanism, or whether it could provide at least the basic principles for a natural gas trade regime in Northeast Asia?* This is a relevant question because to date the ECT is the only legally binding document in the sphere of trade in energy resources. At the same time it could be argued that unless the Treaty takes up new developments in the European gas market into consideration, there is no future for this agreement as a basis for a legal framework in international energy trade. This conclusion seems premature, however. The ECT is still the only legally binding treaty in energy trade, and within the SCO there is no mechanism to enhance energy security. The provisions are not as ‘outdated’ as they may seem. The solution in the Russia-China case could be to use some provisions from the ECT in order to establish a regional framework of cooperation, possibly including the Central Asian states (as far as pipeline trade is concerned; the LNG trade would involve a wider range of participants, but it is outside the scope of this paper).

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## 7. Conclusions

In the analytical framework section we proposed several hypotheses that we attempted to test in this paper:

*With regard to Russian-Chinese negotiations concerning the possibility to build one or several pipelines a key question is:*

1. *The price formula. The price for gas has to be competitive on the Chinese market, yet it has to be high enough to justify investment in upstream development, infrastructure construction and compensation for depletion.*

2. *The difference in internal jurisdictions concerning cross-border trade which adds to the transactions costs increase.*

3. *The absence of the overarching regime for cross-border trade in natural resources and especially a lack of dispute-settlement mechanism.*

We have concluded that (1) the price formula is a necessary but not sufficient factor in the final decision concerning the pipeline project; the fact that agreement on the price formula is not reached means that there is no common understanding of the risks and rent sharing principles. (2) Although the legal frameworks do matter, essentially the risks associated with domestic regulations can be handled through the provisions of a long-term contract. Since the cross-border pipeline project in the Russian-Chinese case could only start in the presence of a long-term contract, it is very likely that the risks arising from domestic regulations concerning the gas sector will be secured through that contract. (3) Behind the lack of the price formula there could well be differences in the perception of risks – or the lack of agreement about the costs for securing those risks. In this light, it seems essential to have a mechanism that would provide certain principles of risk management that would simplify the establishment of a common foundation for negotiations. Such mechanism is essential but currently lacking in Northeast Asian energy markets.

The acceptance of international norms can also limit the negative impacts of differing jurisdictions. The efficiency of markets and the presence of competition can minimize the consequences of legal differences. The presence of an alternative source of imports or alternative market for exports will minimize the potential consequences of the lack of an overarching legal jurisdiction.

Why is there no agreement between Russia and China since 2003? The general expectation is that the price for the resources rises with time; this can be explained by the scarcity and finiteness of the resource<sup>61</sup> - and this is why Russia may wait. In 20 years, China may well be forced to pay more for Russian gas, in case, of course, it does not manage to use its unconventional gas resources – in the former case allowing for higher rent on the producer side. At present, the risks are probably too difficult to bring to a ‘common denominator’ in the absence of international jurisdiction. On the other hand, ‘China will need only half as much more liquefied natural gas from 2020 onwards than it will require in the next decade and it will need *no additional gas transported by pipeline after 2020*’, says an industry consultant.<sup>62</sup> This means that if Russia does not find a way of managing complex issues in negotiations with China in the nearest future,

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<sup>61</sup> Harold Hotelling, ‘The Economics of Exhaustible Resources’ in *The Journal of Political Economy*, Vol.39, No.2 (Apr. 1931), 137-138.

<sup>62</sup> Wood Mackenzie quoted in Carola Hoyos, China Gas Growth to Hit West, in *Financial Times*, July 26, 2010.

it might well never be able to. The fact that management of the problems (such as absence of overarching jurisdiction or China's intention to secure access to fields of the resource holding country for China's own consumption) *is possible* is illustrated by the opening of the Turkmenistan-Uzbekistan-Kazakhstan-China gas pipeline in December 2009.



Figure 2. Altai pipeline<sup>64</sup>

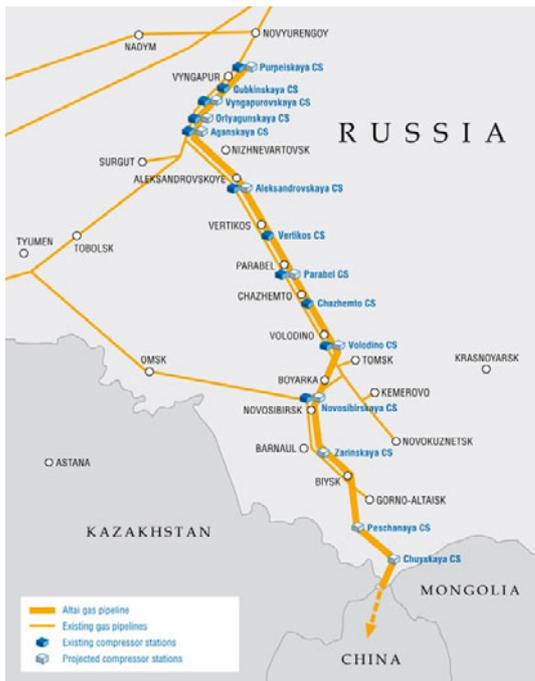
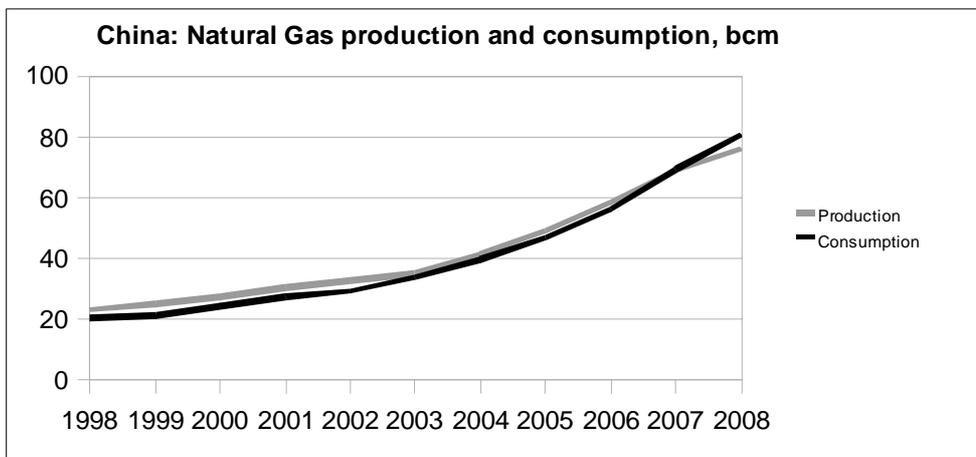


Figure 3. Sakhalin-Khabarovsk-Vladivostok<sup>65</sup>



Figure 4.<sup>66</sup>



<sup>64</sup> Source: Gazprom, <http://www.gazprom.com/production/projects/pipelines/altai/> (20.07.2010)

<sup>65</sup> Source: Gazprom <http://www.gazprom.com/production/projects/pipelines/shvg/> (20.07.2010)

<sup>66</sup> Source: BP, *Statistical Review of World Energy*.

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