

## The Coming of the Russian Gas Deficit: Consequences and Solutions

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**T**his paper argues that the January 2006 gas cut off in the Ukraine encouraged EU policy-makers and the media to focus on the wrong Russian gas issue. The core issue for the EU is not the threat of a politically motivated gas cut off. Rather it is the prospect of Russia, through lack of investment, not being able to produce enough gas to cover Russian and EU demands. The paper considers the extent of the likely gas deficit and determines that if no action is taken by 2010 the EU may be facing a deficit close to or even beyond its current Russian gas import level. The damaging consequences of such a deficit are then outlined for Russia, the Central and Eastern European member states and the older Western EU member states. The paper goes on to argue that an over-arching liberalised market structure needs to be built in both Russia and the EU, underpinned by the strong investor protection provisions of the Energy Charter Treaty. The paper concludes by examining the short- and longer-term measures that can be deployed to close the deficit.

### Introduction

The dispute between Russia and the Ukraine in January 2006 over gas prices and the subsequent temporary cut off in supplies caused political shockwaves across Europe.<sup>1</sup> It focussed questions concerning Russian gas supplies around the issue of whether Russia may cut off gas supplies in the future for political reasons.<sup>2</sup> This was unfortunate because

<sup>1</sup> Stern, *The Gazprom-Ukraine Gas Dispute of January/February 2006*, presentation IEA Paris, June 2006.

<sup>2</sup> As Larsson points out while Russia has until recently been a reliable supplier to Western Europe since the gas first flowed West in 1968

the crisis has sorely misled policy-makers as to the true threat to Russian gas supplies to the European Union: The decline in supply from the Russian gas fields is likely to make it increasingly difficult for Gazprom to honour its supply contracts to customers leading to a significant supply crisis across Russia, the CIS and the EU member states.

The gas deficit<sup>3</sup> identified by the IEA<sup>4</sup> and Vladimir Milov,<sup>5</sup> President of the Moscow-based Institute of Energy Policy is already with us and is likely to grow to above 126 billion cubic metres

the same cannot be said of Eastern Europe. Larsson identifies 40 Russian cut offs in the Central and Eastern Europe states since the end of the Soviet Union. Larsson, *Russia's Energy Policy Security Dimensions and Russia's Reliability as an Energy Supplier*, FOI (Swedish Defence Research Agency), 14, 2006.

<sup>3</sup> The gas deficit as discussed in this paper is based on Milov et al.'s analysis in their recent paper. That is Gazprom's supply of gas plus that of the Russian independents and Central Asian gas supplies matched against future demand, which is based on Gazprom's own figures of planned growth. Milov, Coburn & Danchenko, *Russian Energy Policy 1992-2005*, Eurasian Geography & Economics, 285-313, 304, 2006.

<sup>4</sup> International Energy Agency, *Optimising Russian Natural Gas: Reform and Climate Policy*, 2006).

<sup>5</sup> Milov et al., op. cit. Milov is also a former Deputy Energy Minister of the Russian Federation. The website of the Institute of Energy Policy is <http://www.energypolicy.ru/eindex.php>

(bcm) by 2010.<sup>6</sup> To put this figure in context current Russian exports to non-FSU Europe are approximately 150bcm.<sup>7</sup> There are also strong grounds for believing that the deficit by 2010 may be significantly greater than 126bcm. At first sight it appears counter-intuitive that the country with the world's largest proven reserves of gas 47 trillion cubic metres (tcm) can possibly be running short of gas.<sup>8</sup> However, as explained below a number of factors, not least the running off of existing fields and the lack of investment in new fields, together with a Soviet approach to running the Russian gas market have created the coming shortage. As Milov says:

Oil and gas industries are on the brink of a crisis evident in the inability to sustain medium term production growth. A problem that creates one of the most urgent and pressing challenges for energy policy.....the production crisis is most acute in the gas industry.<sup>9</sup>

<sup>6</sup> Milov et al., op. cit., 305.

<sup>7</sup> Stern, *The Future of Russian Gas and Gazprom*, OUP, 110, 2006. Stern gives an extensive state by state breakdown of 2004 export figures, with approximately 93 bcm going to Greece, Finland, Austria, France, Italy, Germany and the Netherlands and a further 29bcm going to Hungary, Poland, Czech Republic and Slovakia.

<sup>8</sup> IEA, op. cit., 15.

<sup>9</sup> Milov et al., op. cit., 303.

This paper examines the reasons for the gas deficit and analyses the figures presented by Milov and the IEA. It also looks at the serious consequences of a gas shortage for Russia; the Eastern and Central European EU member states who depend on Russian gas and Germany, the greatest dependent amongst the Western member states<sup>10</sup> and Russia's biggest European investor.<sup>11</sup> The paper examines the over-arching failure to liberalise in the EU and Russian energy markets as a significant factor affecting the deficit problem before considering first the principal immediate and then the longer-term solutions. Finally, the paper argues that although there is mutual dependency between Russia and the EU, the EU is by no means as dependent on Russia as Russia is on the EU. However, for the EU to be able to minimise its dependency it has to act collectively when negotiating on energy matters with Russia.

The paper is divided into five parts. Part two analyses the reasons for and potential extent of the gas deficit; part three looks at the consequences of the gas deficit and part four some solutions, including the strategic context and both shorter- and longer-term solutions to the deficit problem. Part five offers a conclusion.

## The Coming of the Gas Deficit

At first sight it does appear inexplicable that Russia could suffer any gas supply deficit given its prodigious reserves of 47 tcm representing 26% of global proven reserves. However, during this decade the supply deficit has become increasingly acute and threatens to become even more so around 2010. The gas deficit arises from two interlocking problems. First, the run off from the existing super giant fields in the Nadym Pur Taz (NPT) region and second the lack of domestic investment by Gazprom in new fields. Gazprom has unfortunately not opened up any new supergiant fields apart from Zapolyaroye which has temporarily reduced the impact of the decline of the NPT fields.<sup>12</sup>

It also appears puzzling as to why Gazprom has not invested in new fields. NPT and even Zapolyaroye are Soviet legacy projects, with high energy prices and the prospects of a running off of the NPT fields one would have thought Gazprom would have had the resources and would have put the necessary investment in place to develop new fields. However, there are a number of powerful reasons that militate against that investment. First, Gazprom itself is heavily in debt, following the purchase of Sibneft it carries \$38 billion of debt.<sup>13</sup> It also appears to be the case that whenever Gazprom does have extra revenue it fritters it away in higher operating costs.<sup>14</sup> Second, the Russian financial system is weak and cannot provide financing on the scale necessary to develop supergiant gas fields.<sup>15</sup> The scale of the capital requirements are truly enormous. For example, the total bill for the development of the next supergiant field in Western Siberia, Yamal, is likely to be in the order of \$70 billion.<sup>16</sup> Gazprom's recent

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<sup>13</sup> Milov, *The Power of Oil and Energy Insecurity*, 13, January 2006. Some commentators may argue that a significant debt in part incurred by the acquisition of Sibneft can be carried by Gazprom because of the high level of its current revenues. The difficulty and key vulnerability for Gazprom is that in order to deliver reliable energy supplies to its foreign customers it has to be able year on year to invest significant amounts of capital into infrastructure and new fields. This is clearly much more difficult to deliver when the business carries so much debt. In the medium term the greater danger for Gazprom is that the level of revenue falls as a result of a fall in the oil price (most of its pricing in its supply contracts are linked to the oil price) creating a real cash crunch in the business. Investment projects would have to be delayed or cancelled adding to supply problems.

<sup>14</sup> Milov, *ibid.*, 10. In 2004, Gazprom reported a \$10 billion increase in operating expenses on the back of rising energy prices.

<sup>15</sup> Kotin, *Its Gogol Again*, 17 James A Baker III Institute for Public Policy, October 2004. Kotin argues that the country has no proper banking system and that while larger sums than \$200 million could be raised in practice "when Russian citizens have real business to do they do it in New York or London".

<sup>16</sup> Milov, *Energy Insecurity*, *op. cit.*, 8. \$70 billion is the total lifetime cost of the project. However, a significant proportion of the capital will have to be spent upfront on preparing the fields and building the pipelines and compressor stations. It should also be noted that there are still questions concerning the viability of at least part of the Yamal field. It is unclear whether the harsh climate of the

decision to develop the Shtokman field without a foreign partner will add significantly to these already heavy capital demands.<sup>17</sup> Thirdly, even where Gazprom invests, the investment is directed at foreign acquisitions and export infrastructure, not on building and refurbishing domestic pipelines and opening up new fields.<sup>18</sup> Fourthly, while firms such as BP may be willing to risk a few billion in the harsh and uncertain Russian business environment \$70 billion plus is more than most major energy firms even acting in consortia are able to contemplate, without much stronger protection of investor rights than Russian domestic law can currently provide.<sup>19</sup> This issue of investor rights has recently been given a very sharp edge by the behaviour of the Russian authorities in relation to Shell and Exxonmobil's licences to explore and extract at Sakhalin.<sup>20</sup> The production sharing agreements made in the low energy price era of the early 1990s now appear to be able to be undermined by the Russian government because economic circumstances have changed. Unwillingness to comply with contractual arrangements is likely to act as a very significant deterrent to potential future investors. Fifthly, another concern for Western investors is that their rights to control an asset are limited by a 49% foreign shareholding rule.<sup>21</sup> Sixthly, by a wider hostility to FDI, which in practice forces Western

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Yamal region means that at least some of the reserves are in fact inaccessible or only accessible at far too high a cost to be worth recovering.

<sup>17</sup> *President Supports Shift on Shtokman*, *Moscow Times*, 11 October 2006.

<sup>18</sup> IEA, *op. cit.*, 29. The IEA criticises Gazprom on this point. In its view Gazprom needs to spend at least \$11 billion annually on new production, pipelines and refurbishing pipes. Instead it spends almost exactly that on the North European Pipeline and foreign acquisitions. Stern similarly notes, "Gazprom investment plans for the next decade do not seem to be specifically targeted at slowing production decline in existing fields". Stern, *Future of Russian Gas*, *op. cit.*, 8.

<sup>19</sup> The confidence of investors have been recently shaken by the threat to the licences of Shell and BP in Sakhalin 2 and Kovykta fields. See respectively, *The Times*, *Putin Takes Hard Line on Shell Sakhalin Dispute*, 28 September and *Financial Times*, *Gazprom Puts Pressure on TNK/BP* 28 September 2006.

<sup>20</sup> *Russia Cancels Shell Permits for Sakhalin 2*, *Financial Times*, 19 September 2006.

<sup>21</sup> Larsson, *op. cit.*, 52.

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<sup>10</sup> Stern, *The Future of Russian Gas*, *ibid.*, 110.

<sup>11</sup> FDI Magazine, January 2005.

<sup>12</sup> IEA, *op. cit.*, 27.

shareholdings in Russian energy firms to accept on the whole much smaller percentages than 49%.<sup>22</sup>

The deficit is also widened by, given the circumstances, the extremely perverse decision of Gazprom to press on with both rural and urban gasification.<sup>23</sup> Gazprom is aiming at 60% regional gasification by 2008 and is building 12,000km of new pipeline. The projected budget cost is \$1.3 billion and will result in a further supply requirement of 9bcm. Despite the difficult supply circumstances Gazprom has even gone further than its current budget plans and has already spent \$1 billion on gasification alone in 2006.<sup>24</sup> This suggests the new supply requirements will be nearer 20bcm rather than 9bcm by 2008.<sup>25</sup> A further problem which impacts on gas availability is that Russian compressors inefficient use gas to pump the gas along. The loss to the system is enormous. It is estimated by the IEA at 42bcm.<sup>26</sup> Gas is also lost by virtue of the aging nature of much of the ‘Soviet legacy’ infrastructure. While Gazprom is now seeking to refurbish its Soviet era infrastructure it is open to question whether enough is really being spent on that infrastructure to radically reduce gas losses.

As Stern points out that 58% of the pipes are more than twenty years old. In the harsh environments this infrastructure has to operate in there is real concern of gas leakages from the aging infrastructure. Calculations by VNIgaz in 2002 suggest that the gas pipeline network as a whole is operating at 9% below its design capacity and that the greatest loss was in the central pipeline corridor was more than 12%

below capacity.<sup>27</sup> Stern also points out that “lack of profitability in the transmission system is a potentially significant obstacle to timely refurbishment of the network”.<sup>28</sup> Lack of profitability is likely to remain an issue so long as domestic gas prices remain so low in comparison to world prices.

The consequences of this lack of investment are extremely serious as can be seen from Milov’s figures.<sup>29</sup>

	2004	2010
Gazprom’s gas production <sup>a</sup>	545	550
Gazprom’s export to Europe/CIS <sup>b</sup>	191	312 <sup>c</sup>
Remaining volume for domestic customers	354	238
Russia’s domestic demand	402 <sup>d</sup>	469 <sup>d</sup>
Gap	69	231 <sup>d</sup>
		202 <sup>e</sup>
Gas deliveries from Central Asia <sup>f</sup>		105
Total gap		126
		97 <sup>e</sup>

<sup>a</sup> Without new Yamal fields, optimistic forecast<sup>30</sup>

<sup>b</sup> Excluding Asian Exports

<sup>c</sup> Includes 200bcm Europe & 112 bcm to CIS

<sup>d</sup> Probable scenario growth 4.3%

<sup>e</sup> Reduced Scenario 2% per year

<sup>f</sup> best possible scenario

*Note:* As note c indicates, European demand is likely to increase by approximately 50bcm in the 2004-2010 period. This demand increase is fuelled by closing down of nuclear reactors, greater European environmental regulation and reduction of own EU gas sources.

These figures are supported by the IEA who estimate a decline of 20 bcm/y leading to a gap by 2015 of 200bcm based on current demand levels.<sup>31</sup>

It should be emphasised that Milov’s figures are conservative and optimistic.

It assumes that Gazprom is able to maintain supply around 550bcm.<sup>32</sup> This may not in fact be the case for two reasons. First, accessing gas in smaller NPT fields while awaiting the next supergiant field, Yamal to come on stream may not be easy. As Stern points out, these smaller fields have higher production costs and require more complex processing.<sup>33</sup> Second, it is unclear how much of the proven remaining reserves of the existing supergiant NPT fields can be effectively and profitably extracted. Factors that may affect production include damage caused by over-production during the Soviet period and that production of the remaining gas may prove very expensive.<sup>34</sup>

Lack of alternative supplies to the NPT fields is not the only problem facing Russian gas supplies. It is also open to question how effective is Gazprom’s rescue strategy: Central Asian gas. Gazprom hopes to rescue itself from the supply gap by purchasing gas from Central Asia. There is more than a hint of desperation in the plan of the world’s largest holder of gas reserves to actually *buy* gas. The sense of the Central Asian plan being a desperate endeavour is reinforced when the true gas capacities of Turkmenistan, Uzbekistan and Kazakhstan are examined in detail. The plan envisages a rise in gas supplies from the Central Asian states, and principally Turkmenistan of 6bcm in 2004 rising to 60bcm then 80bcm by 2009, with Uzbekistan and Kazakhstan providing the balance of 25bcm.<sup>35</sup> On the facts such capacity deliveries look hopelessly unrealistic. There are a range of difficulties spotted by the IEA. These range from the prospect of Turkmenistan with very little investment over the last decade doubling its gas production within a few

<sup>22</sup> Larsson, op. cit., 62.

<sup>23</sup> One possible reason for the decision to push ahead with rural and urban gasification may be that gasification is a policy required by the Russian Federal administration.

<sup>24</sup> IEA, op. cit., 38.

<sup>25</sup> Traditionally far more gas was used for industry than for domestic use. Increasing domestic gasification makes it more difficult for Gazprom to protect gas supplies to domestic residential customers and foreign customers by cutting domestic industrial supply as the balance of demand moves in favour of residential gas supplies.

<sup>26</sup> IEA, op. cit., 36. As much as 8bcm could be shaved off this figure via efficiency measures.

<sup>27</sup> Stern, *The Future of Russian Gas*, op. cit., 36.

<sup>28</sup> Stern, *The Future of Russian Gas*, op. cit., 37.

<sup>29</sup> Milov et al., op. cit., 305.

<sup>30</sup> It is estimated that Yamal has the greatest source of gas in the Western Siberian fields of 145bcm/y when at full production. Milov et al., op. cit., 304. However, senior Gazprom officials have indicated that development will not commence until 2016 at the earliest. This explains the note a in Milov’s table and his exclusion of Yamal capacity. IEA, op. cit., 28.

<sup>31</sup> IEA, op. cit., 34.

<sup>32</sup> Stern suggests that the position may be slightly worse in 2010 with supply reaching only 530bcm, but considerably worsening to 340bcm by 2020 as decline accelerates as the three main fields are depleted. Stern, *The Future of Russian Gas*, op. cit., 33.

<sup>33</sup> Costs are driven up by a large number of smaller fields as well as the fact that these fields are not dry gas but involve production of liquids and therefore ‘more complex processing and transportation’. Stern, *The Future of Russian Gas*, op. cit., 58.

<sup>34</sup> Stern, *The Future of Russian Gas*, op. cit., 33-34.

<sup>35</sup> IEA, op. cit., 31.

years to the difficulty of using the Central Asian Centre (CAC) pipeline which again has not been maintained in good order and is now operating at significantly below capacity.<sup>36</sup> On the other side of the border, there are also questions as to the capacity of the Russian pipeline system to put through the Central Asian gas.<sup>37</sup> Milov's figures also do not appear to take account of Gazprom's rapid domestic gasification which is increasing domestic demand nor the loss of gas to pump the rest of the supply through the system. These last two features alone could add an additional 60bcm onto supply demands.

It is not all bleak. One potentially bright spot is that the Russian gas independents attracted by increasing domestic prices may be able to fill some of the gap. The National Energy Strategy suggests that they will only provide 20% of supply by 2020 as opposed to 13% today. However, the IEA working from independent gas company projections estimates that the true figure as early as 2015 could be 40% that is 260-290bcm.<sup>38</sup> However, Stern in a detailed analysis of the Russian gas independents suggests that only Novatek and possibly TNK/BP are likely to be in a position to significantly add to gas supplies. The gas generating oil companies, such as Rosneft ambitions in the gas sector are likely to be limited by the extent of their reserves and the availability of capital and the prospect of greater profitability in the oil sector.<sup>39</sup> He believes that the more conservative approach of the Russian Energy Strategy 2003 is therefore essentially correct with a production

figure of 120-135bcm perhaps up to 150bcm by 2015.<sup>40</sup>

Furthermore, whatever level of supply is available from the independents the delivery of that gas depends on gas independents access to capital and confidence that they will obtain significant access to Gazprom's pipe network. Both assumptions are open to question. Will Gazprom permit significant use of its pipeline by independents and the onsale of independent gas to foreign purchasers? Significant independent access to the Gazprom's network would undermine the whole concept of a Kremlin directed vertically integrated energy giant that has been built up during the second Putin administration. An alternative scenario to increasing access by gas independents to the network is that access will in fact be limited and consequently capital to develop their business dries up. Gazprom then acquires more and more independents to stem the loss of supply from its own fields as supply decline accelerates. In such a scenario it is doubtful whether weakened independents newly acquired by Gazprom will be as successful in maintaining high production levels.<sup>41</sup>

Another alternative source of gas to plug the deficit is gas from the Shtokman field. Gazprom has announced that it will be using gas from that field for deliveries via the North European Pipeline (NEP) into the EU. Shtokman looks at first sight like a potential solution to any deficit problem. The Shtokman field is a supergiant field of 3.7tcm.<sup>42</sup> However, on closer examination developing that field is very problematic. In the first place, as explained above, given the other capital demands on Gazprom it is open to question how Gazprom is going to be able to put in place the necessary capital for Shtokman, for the other fields it needs to develop and for refurbishing the existing infrastructure as well. Secondly, Gazprom neither has

the technology nor the experience of delivering unprocessed gas from a seabed to an onshore facility for processing. In fact, only Statoil has experience of such a long-distance under-water pipeline as part of their Snovit project. The pipeline is only 120km and is not yet completed, and when completed it will be the longest such pipeline in existence. The pipeline that Gazprom proposes to build on its own will be several times the length of the Snovit pipeline at 500km.<sup>43</sup> The likelihood is that any gas from the Shtokman field will only start flowing into the NEP around the middle of the next decade at the earliest. Far too late to deal with the deficit crunch that Milov predicts around 2010.

With so many variables and insufficient information it is difficult to provide a precise account of how great the gas deficit is likely to be by 2010. What can be said is that Russia and the EU will be lucky to have a deficit of only 126bcm. There must be concern that Gazprom will deliver less than 550bcm as a result of inadequate development of the smaller NPT fields, and inability to access all remaining resources of the NPT supergiants combined with the delay in opening Yamal. In addition, the majority of the scale of the proposed Central Asian gas supply is likely to be either unreachable because of defective pipelines or is non-existent. Until 2006 Turkmenistan supplied Ukraine, via the Russian pipeline, 36bcm. A figure around this level is probably more likely than the 80bcm under the Russian-Turkmenistan agreement. This is assuming no pricing disputes disrupt supplies, there is no supply diversion and there is no further decline in pipelines capacity. Additional gas from the independents may prove one means of plugging the deficit. However, whether independents have sufficient gas and whether Gazprom will permit them to use its network is open to question. It is reasonable to conclude therefore that the gas deficit may well be closer to 200bcm than 126bcm by 2010.

There are also additional reasons for believing that the deficit may be heading for the upper end of the

<sup>36</sup> IEA, op. cit., 31. The overall capacity of the CAC is 90bcm/y but because of lack of maintenance the maximum capacity is 50bcm/y. The costs of refurbishment are likely to be significant; the IEA questions the \$2 billion and \$1 billion projections for just the Kazak and Uzbek part of the pipelines as likely to be too low. There are also continuing pricing disputes between Russia and Turkmenistan.

<sup>37</sup> IEA, op. cit., 32. There are also a number of questions concerning the ability of the Russian pipeline system to function effectively to take Central Asian gas. Russian parts of the pipeline system suffer from reduced capacity. The system may be operating at 60bcm below capacity.

<sup>38</sup> IEA, op. cit., 32.

<sup>39</sup> Stern, *The Future of Russian Gas*, op. cit., 23.

<sup>40</sup> Stern *The Future of Russian Gas*, op. cit., 58.

<sup>41</sup> As Milov points out, Gazprom is one of the most inefficient energy companies on the planet. Its return on total assets ratio is not far off that of Pemex, globally the most inefficient energy company. Milov, *Russian Energy Sector and its International Reputation*, Tokyo Presentation, 20, March 2005.

<sup>42</sup> IEA, op. cit., 28.

<sup>43</sup> "Go it alone tactics from Gazprom leave Experts Divided", *Financial Times*, 11 October 2006.

projections. In the winter of 2005/2006 several EU member states both in the Eastern and Western parts of the Union did not receive their full contractual supplies of Russian gas.<sup>44</sup> It is also understood that in Russia itself industrial suppliers did not receive their full contractual supplies either. Incredibly, this June according to Anatoli Chubais, CEO of UES Russia's electric power monopoly gas restrictions were imposed in UES gas power stations.<sup>45</sup> As Milov says "gas shortage is not a prospect it is already here".<sup>46</sup>

## Consequences

The potential consequences of a significant gas deficit are likely to be particularly severe for Russia, the Central and Eastern European states and Germany.

Russia is the most vulnerable to significant gas shortages. If even just foreign gas consumption is cut and Russian consumption is protected Russia faces a cut in overseas earnings, and as Gazprom alone provides approximately 20% of Federal tax receipts, cuts in tax revenue.<sup>47</sup> The Russian state could then face significant problems in affording additional benefits granted during the Putin years, such as enhanced pensions.<sup>48</sup> If the gas deficit is more significant, then cuts are likely to fall disproportionately on industry. Unfortunately Russian industry (together with that of Ukraine and Kazakhstan) is the most energy-inefficient in the world hence gas shortages could inflict significant

damage on Russian industry.<sup>49</sup> To make matters worse, aside from gas exports, oil, minerals and metals are the other three principal foreign exchange earners and all rely heavily on gas or electricity generated by gas.<sup>50</sup> The prospect of a serious gas deficit is extremely dangerous for Russia with the economy and the state's legitimacy under threat from what would become a vicious downward spiral which would undermine the economic gains that have been made since 1999.

Most Central and Eastern European countries are heavily dependent on Russian gas.<sup>51</sup> A non-temporary shortage could throw many CEECs into considerable difficulty both in respect of industrial production and in terms of the comfort and safety of their peoples. In addition to personal discomfort and immediate economic disruption very high energy prices generated by the shortage could inflict significant economic damage on CEECs' economies, including delaying entry to the Euro and slowing growth.

However, from a European strategic economic viewpoint, the most dangerous consequence of significant gas shortages does not lie in Central and Eastern Europe, but in Germany. If there are significant Russian gas shortages to the Germany economy, the Union's largest, such shortages could cause widespread economic disruption across the Union.<sup>52</sup> The sharp edge to Germany's predicament is caused by the economic reality that the gas deficit is likely to hit well before the NEP comes into operation and Shtokman gas comes on stream. As a result any gas shortage, whatever the formal contractual position, will hit the most westerly EU member states receiving Russian gas first and hardest, and Germany as the biggest Western recipient hardest of all.<sup>53</sup> In addition, for

Germany, the largest European investor in Russia there is also the prospect of a double whammy of curtailed gas supplies and a fall in the value of German foreign investments as the Russian economy contracts in the face of such gas shortages.

The prospect of gas shortages in Germany underscores the danger of individual member states seeking to come to bilateral arrangements with Russia. In essence, Germany has made a major strategic error. It has made itself heavily dependent on Russian gas without having the corresponding power to require its Russian partner to take steps such as liberalising its own markets; permitting free flow of foreign capital and ensuring the protection of property rights of investors that would ensure that that gas is available and will be delivered.

## Solutions

Writing in October 2006, the EU and Russia still have time to minimise the impact of the gas deficit forecast by Milov and the IEA to become acute by 2010. Below, the author sets out a number of short- and medium-term measures by which the deficit can be tackled. However, before these measures are discussed it is necessary to consider the fundamental strategic shift that is required both of the Russians and the European Union to tackle the deficit. Russian energy protectionism needs to be recognised in Moscow for the damage that it is inflicting on fundamental Russian interests. Equally, the EU member states have to recognise that their parallel energy protectionism fails to provide effective energy security for the EU states either. Both the EU and Russia need to undertake a major strategic shift in the direction of market liberalisation to create a single EU-Russia wide energy market.

<sup>44</sup> For clarification, the author is not here referring to politically motivated cut-offs but rather non-deliveries because of shortages.

<sup>45</sup> Moscow-Russia is currently facing a gas shortage, Anatoli Chubais, chief executive of Russia's electric power monopoly SEU[UES], said here Tuesday: "There is a real gas deficit in the country", Chubais said of Russia, which holds the largest gas reserves of any country in the world. "In the month of June restrictions were imposed on the use of gas in our power plants", he said in remarks on the sidelines of an investors' conference. Chubais stressed the fact that the restrictions came in June rather than in the middle of a bitter winter. FIN 24, 20 June 2006.

<sup>46</sup> Milov, *Interview*, Economies in Transition (World Bank), 13, April-June 2006.

<sup>47</sup> Stern, *Gazprom*, op. cit., 56.

<sup>48</sup> Milov, *Energy Insecurity*, op. cit., 4.

<sup>49</sup> Milov et al., op. cit., 288.

<sup>50</sup> IEA, op. cit., 27. Approximately 70% of thermal electricity generated by gas in 2004.

<sup>51</sup> See for example the European Commission report *Long Term Gas Security in an Enlarged Europe* (December 2003). Particularly the position of Poland, 94 and following.

<sup>52</sup> According to the Atlantic Review the current level of German gas dependency on Russia is 37%, *Atlantic Review*, April 2006.

<sup>53</sup> Because the NEP is very unlikely to be in place before the deficit becomes critical the only transport mechanism available for

Russian gas is the East to West pipeline system running through Poland and Ukraine and on into Western Europe. If a significant gas shortage develops the transit states are very unlikely to be willing to permit gas westwards without first taking the gas they require for themselves. Hence in any serious shortage situation it is the most westerly EU member states who ordinarily receive Russian gas who are likely to be hit the hardest by any deficit.

The current Kremlin administration fails to understand and accept that a Soviet style centralised quasi-ministry, which seeks to suppress competition and restrict foreign investment will take Russia on the path to gas deficit hell.<sup>54</sup> It would appear that the Kremlin administration believes that it is protecting its greatest strategic asset: its gas industry from predatory foreigners and oligarchs. Unfortunately for the Kremlin what it is in fact doing is suffocating its gas industry, reducing its competitiveness and starving it of investment and ultimately threatening one of its principal sources of revenue.

As British Labour MP Denis McShane has pointed out when it comes to statist and anti-market behaviour, some EU member states have been more Putinesque than Putin.<sup>55</sup> Although the EU talks a lot about liberalisation and in fact encourages Russia to open up its own energy markets, in practice many EU member states are running their own damaging protectionist energy regimes. Aside from the United Kingdom and to a degree the Scandinavian and Dutch, most member states run managed market systems not entirely dissimilar to the Russian system. The national energy company organised long term supply contracts with usually foreign suppliers, such as Gazprom. The national energy company then controlled the supply and usually had significant control of both the transmission system and much if not all of the supply contracts to customers, sometimes down to the retail level.

While such managed markets may well give a false sense of security significant costs are also passed on to consumers. There is little choice and very little competition and a strong incentive to corporate inefficiency and misallocation of capital. In addition, such markets limit energy security as they tend to be limited to an individual national

territory. It is true that the EU had enacted a number of liberalisation directives in the energy sector to force through market liberalisation. However, the member states and energy incumbents successfully frustrated the liberalisation programme.

At first therefore it looks as if any strategic shift toward liberalised and open markets in Russia and the EU which would provide the most positive context in which the gas deficit could be tackled is unlikely. However, there are a number of growing powerful realities that could provide the basis for a strategic shift in both Brussels and Moscow. The most immediate powerful reality is the facts on the ground. As Milov points out above, the gas deficit is already here. There have been gas cuts this summer in Russia; last winter a number of EU member states did not receive their contractual supplies of Russian gas. Winter by winter as we approach 2010 the gas deficit will widen, creating stress in the energy markets, economic disruption and raising political fears in many European capitals. In such a context policy-makers both in Moscow and Brussels are likely to far more willing to contemplate radical action in their energy markets.

A second major factor is that although the EU has not been practising what it preaches on energy liberalisation, the Commission's most powerful department, DG Competition is now looking to open up EU energy markets. In March, DG Competition published a Preliminary Report on the state of EU energy markets.<sup>56</sup> The report reads like a charge sheet against domestic energy incumbents and the member states for failure to liberalise the energy markets. Gross market partitioning, foreclosure of markets, denial of access to new entrants and flagrant violation of Community legislation.

Under the leadership of Ms Kroes, the Commissioner for Competition, DG Competition is beginning to bring pressure to bear on the energy incumbents to comply both with Community liberalisation legislation and the competition rules. Raids have taken place on major incumbents and prosecutions are likely to follow. Ms

Kroes may well use her formal powers to the maximum to open up the EU's energy markets-if necessary by forcing ownership unbundling under Article 86(3) of the EC Treaty.<sup>57</sup>

Hence by virtue of action by DG Competition at least half of the EU-Russia market is likely to be liberalised in the coming years. However, this EU liberalisation has knock-on effects on the Russian market. In the first place, it is unlikely that Ms Kroes and DG Competition will be content with tackling the downstream players in the EU market. DG Competition is likely to go upstream as well to investigate the energy producers in the gas sector. There are a number of issues in relation to gas producers. These include questions concerning cartelisation, operation of long-term supply contracts, destination clauses and steps towards vertical integration. Gazprom as the most powerful energy company operating in the EU would be likely to be at the centre of any upstream investigation.

Secondly, a liberalised EU market would give Gazprom and other Russian energy majors considerably freer rein to acquire significant parts of the EU energy infrastructure and supply system. In such circumstances the reciprocity issue becomes a lot sharper. The EU member states are not unreasonably likely to ask why Russia should have access to the energy assets of a newly liberalised EU energy market, if Russia does not grant equivalent access to its own market. Gazprom, allowed to roam freely across the liberalised EU energy markets could for instance cut out the gas middlemen

<sup>54</sup> What is surprising about this is that in the oil sector a far more open attitude to liberalisation has actually delivered high levels of production and significant foreign investment. Gas and oil provide almost a control test of how not to do it and how to do it. However, since the fall of Yukos both liberalisation and production have stalled. Milov, *et al*, *op cit* 286.

<sup>55</sup> Note of the author of intervention by Mr McShane in the Energy Security Hearings October 3<sup>rd</sup> 2006, Council of Europe, Strasbourg.

<sup>56</sup>European Commission, *Energy Sector Inquiry Preliminary Report* (February 2006).

<sup>57</sup> Article 86(3) of the EC Treaty is the only provision in the Treaty that permits the Commission to take direct legislative action without the consent of the Parliament or Council. Under Sir Leon Brittan (as he then was) DG Competition used Article 86(3) to require Member States to break open a number of utility markets most notable of which was telecommunications. In the gas sector the most effective liberalisation step would be to require the Member States to unbundle the ownership of the supply and transmission companies. This it is argued is a vital step as it fundamentally changes the industry dynamics. A transmission owner not in possession of supply makes his profit principally from access charges. The more gas he puts through the pipes the more profit he makes-this incentive to maximise throughput should result in reduced prices for ultimate consumers.

such as EON or Gaz de France and supply gas directly down the supply chain without the need for the participation of these historic energy incumbents. In such circumstances Russian firms are likely to find restrictions being placed on their access to the EU energy markets.

Faced with gas shortages, EU energy liberalisation, antitrust action and the prospect of market access restrictions the Kremlin may well be willing to reconsider its current energy strategy. There is also a far more positive reason for Russia to embrace a more liberal energy strategy: Liberalisation in the right conditions could significantly enhance the market power of Russian energy majors.

If with the advent of EU energy liberalisation Russia agrees to double liberalisation, full open market access of Russian energy markets, together with open EU energy markets, Russia's energy majors can make significant gains. The Russian energy majors would obtain free and uninterrupted access to the energy markets of the EU. They would no longer fear that on grounds of lack of reciprocity, the EU member states might shut the door on them. Furthermore, in a fully liberalised market, Gazprom, Rosneft and Lukoil would be in a very powerful position. They would be able to lever their energy assets to obtain substantial Western capital and know-how and have the whole of the European market in which to operate within and build themselves up as Russian equivalents of Western energy majors.

In a genuinely open EU and Russian energy market, the opportunities for Russian energy majors are truly immense. Russian energy companies would uniquely access to huge energy resources and have a rich domestic EU energy market close at hand with deep liquid capital markets. In addition to this world-beating combination, there are a number of European energy majors who could bring valuable skills, know-how and technology which could significantly enhance the effectiveness and reach of the Russian majors. In such a context, it is not unreasonable to see the creation of a BP Gazprom entity as the world's leading energy company where the EU-Russia market is BP Gazprom's massive home market.

Double energy liberalisation would also provide a significant boost to closing the gas deficit. However, for liberalisation to work effectively it needs to be coupled with effective protection of property rights. Such entrenchment of property rights is vital to ensure that energy investors have the confidence to place the tens of billions of dollars in private capital that is necessary to fund the rebuilding of the Russian gas infrastructure and the opening up of new fields. The only way to do that is to ensure the Energy Charter Treaty is complied with by all parties, including Russia in full.

In theory, the EU member states and Russia could sit down to draft a new energy treaty. However, there are two powerful arguments against any new energy treaty. First, any new energy treaty negotiations would almost certainly see state parties attempting to weaken investor protection. Particularly post the recent Sakhalin debacle weaker investor protection provisions are unlikely to make most potential investors more inclined to invest in Russia. Weaker investor protection provisions are likely to act as a market signal to at the least increase the cost of capital and reduce potential available capital. At the worst it could lead to a significant reduction in the number of investment houses who would be willing to put up the capital required to bring on new gas fields. Second, there is the issue of timing. Given the gas deficit problem time is of the essence. Neither Russia nor the EU have the time to spend several years negotiating the details of a new energy treaty. Investment needs to be encouraged and secured now and the ECT is the critical vehicle to secure that investment.

In addition to liberalisation and the ECT there is a third element that is required, the creation of a common EU external voice on energy matters. The gas shortage and the German experience is a classic example of the failure of bilateralism. The EU speaking with one voice can negotiate effectively with Russia, ensure that double liberalisation is delivered, strong investor protection via the ECT to lever in capital into the Russian gas sector is honoured and that

the massive all European energy market is effectively policed.<sup>58</sup>

Turning to the specific 'fix' questions of the gas deficit: The major difficulty Europe and Russia now face is that we are now less than three and a half years from 2010 – the point at which the gas deficit is likely to become acute. Hence, any strategy to deal with the deficit has to consider what steps can be taken rapidly to reduce the shortage. It is argued that since pipelines and new production take time, they should not be the first objects of any deficit reduction strategy. It is argued that in the first instance there should be a focus upon the energy efficiency, both by repairing leaking pipelines and putting in more efficient compressor stations to introducing a crash course of energy efficiency into extremely energy-inefficient Russian industry.

There is also the potential for the EU member states to source alternative gas supplies. It may be possible to source additional alternative gas supplies from Norway and Algeria and by LNG from further afield, such as Qatar. In particular, the development of three LNG gasification plants in the United Kingdom suggests that the UK may be able to close some of the deficit gap by importing LNG and then putting the gas through the UK interconnectors and into the continental pipe system.<sup>59</sup> Those LNG plants and the dual flow interconnectors between the UK and the continent are currently expanding capacity. The British should be encouraged to continue to expand capacity. Germany and the CEECs should look at routing gas from the UK LNG plants and Norway through expanded British interconnectors as a potential short-term measure to provide an alternative source of supply by 2010.

In the longer-term, Western capital needs to flow into Russia to open up the

<sup>58</sup> DG Competition and the Russian Anti-Monopoly Agency would initially have to lead on policing the market. However, such a market may well require dual regulation by an EU and Russian. It is doubtful the member states could effectively seek to regulate its market with 25 different regulators while co-ordinating its regulation of the EU-Russia market with a single Russian regulator.

<sup>59</sup> HLSC, *The Commission's Green Paper 'A European Strategy for a Sustainable, Competitive and Secure Energy'*, HL Paper 224, paras 6-14, 2006.

Yamal fields and refurbish the UGGS as well as develop Shtokman. A medium-term objective would be to start opening up the Ob and Taz bay fields as they are the most economic to open up being in shallow water and near fields in current production.<sup>60</sup> Gas supplies can also be increased by capturing a significant part of the 60bcm that is flared every year<sup>61</sup> and potentially saving another 50bcm by introducing more modern and efficient gas turbines.<sup>62</sup>

## Conclusions: Not Quite Mutual Dependency

One of the strangest features of the debates on Russian gas supplies is that Russia is often portrayed in the Western media as an all-powerful energy superpower. It is not. In fact Russia and the EU are locked into a sort of mutual dependency. Russia's pipelines all point in one direction, toward the European Union, and the EU is by far the richest market for Russian gas. The EU is the profitable market for Russian gas.<sup>63</sup>

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<sup>60</sup> Stern, *The Future of Russian Gas*, op. cit., 14-15.

<sup>61</sup> The official figures suggest that flaring only amounts to 15bcm/y. However, satellite images of Russia suggest that flaring is being carried on at much higher levels. The IEA believes the satellite images suggest that flaring is running at approximately 60bcm/y. IEA, op. cit., 21.

<sup>62</sup> IEA, op. cit.

<sup>63</sup> China most certainly is not it, notwithstanding the comments of President Putin on Monday 11 September 2006 in *The Financial Times*. He suggested that in 10-15 years China will account for 30% of Russian oil and gas. This idea is almost as fanciful as buying gas from Central Asia. The key factor is the shape of the Chinese energy market. China has substantial quantities of cheap coal which provides a significant on-site competitor fuel product. It is as a result difficult to see how opening up new fields in Eastern Siberia and building expensive pipelines across Siberia will actually recover its costs. Worse still China has currently little use for gas. Current gas consumption is currently running at around 6% of total energy consumption and a new West-East pipeline is now bringing domestic supplies to the main population centres. Furthermore, just as in Russia China controls energy prices. Russia will not get a free market price for its gas – in which case once again does it make sense to open up new fields and build pipelines? China is likely to build up gas supplies from foreign sources but the most likely source is LNG tankers from Indonesia than from Russia, as Gazprom looks like it has been far too slow to move into this

Equally, the EU is dependent on Russia. However, in this mutually dependent relationship the EU is not quite mutually dependent. Russia really has nowhere else to sell its gas and certainly no other such rich market. The EU by contrast has the financial capacity to make other arrangements. There is in fact plenty of gas in the world, it can be shipped in by LNG and alternative fuels to gas can be employed.<sup>64</sup> The EU acting in concert has the means to offer Russia a convincing powerful future for its gas industry. However, it also has the means, if Russia refuses the offer to walk away and to reduce Russia to the supplier of last resort. For the EU to be so effective and powerful it would have to act together and also appreciate the strength of its position in any negotiations with Russia. The tendency with the EU is for individual member states is to cut individual deals with Russia. However, the predicament of Germany, dependent on Russian gas supplies but without the power to reform Russia's dysfunctional gas market-is a standing warning to all member states of the dangers of energy bilateralism.

If the EU and its member states are going to be able to head off this looming energy crisis they need to learn to act collectively and will the institutional means for collective action.

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market, and has neither the capital nor the technology.

<sup>64</sup> The 2003 report of the House of Lords Select Committee on the EU on *Gas Liberalised Markets and Security of Supply* is pertinent here. 'The physical existence of gas is not a limiting factor. The global gas reserve is 50% higher than that of oil, at some 60 years of current demand. Gas resources have been much less explored than oil and much of the world's reserves were found by organisations drilling [primarily] for oil. There will be significant growth in liquefied natural gas as costs fall. This will result in an increasingly global gas market with some growth in [market] liquidity'. HLSC, *Gas Liberalised Markets*, HL Paper 105, para 48, 2003.



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