



**Future Gas Production in Russia:
is the concern about lack of investment justified?**

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Introduction

Since at least 2006, concern has been expressed by a number of commentators, both western and Russian, that Gazprom has not invested in future production sufficiently to guarantee that it can meet its market obligations and, particularly, its long term contract export obligations to European customers.¹ This argument runs that, although Gazprom may have huge reserves, it has not paid enough attention to developing them. Instead, at the behest of the Russian government, it has invested hugely in the Russian oil and electricity sectors, as well as exotic overseas projects in African, Middle Eastern and Latin American countries.

The outline of the problem had been clear for some years: the Russian gas industry has been sustained for the past several decades by three super-giant fields, all of which were in decline by the early 2000s – the decline rate is difficult to estimate but was of the order of 18-25 Bcm/year in the early to mid 2000s.² During the period 2001-08, Gazprom developed one additional supergiant field and a number of smaller satellite fields, with a total capacity of 217.7 Bcm/year, which enabled production to increase during the early 2000s and then stabilise.³ The last of these additional fields was planned to be brought on stream in 2011 after which, without new fields, production would decline relatively quickly. This was confirmed by Gazprom as long ago as 2007 (Chart 1).

In a major study of the Russian gas sector published in 2005, I characterised this situation as the lack of a “future supply roadmap”.⁴ A key question for Russian gas production over the past several years has been how quickly Gazprom can bring into production the new generation of supergiant fields on the Yamal Peninsula, starting with the Bovanenko field.⁵ Until mid-2009, Gazprom’s publicity had stated that production from new fields on the Yamal Peninsula would begin in the 3rd quarter of 2011, with output of 7.9 Bcm of gas in the final quarter of that year.⁶ Critics pointed to the investment requirements and the technical challenges of these new fields, asking whether they could be developed and by what date.

The period since the start of economic recession and financial crisis in the autumn of 2008 has – or should have – completely changed, at least short term, perspectives on Russian gas production and Gazprom’s ability to supply gas to its customers, European and non-European. The announcement that Gazprom’s 2009 investment programme would be substantially reduced, and that the Bovanenko development would be delayed by one year – to start in the 3rd quarter of 2012, has again raised the issue of adequacy of future Russian gas supplies and investments. This paper highlights the changes which have taken place since late

¹ See among others: IEA 2006, Riley 2006, Milov 2006, Dienes 2007, Simmons and Murray 2007, Helm 2007, Noel 2008 and 2009.

² Although decline rates at large cenomanian gas fields are neither linear nor easy to predict; in 2008 the decline was 14 Bcm but the reason for this reduction may simply be that lack of demand required less output.

³ Gazprom Press Conference 2009 Production.

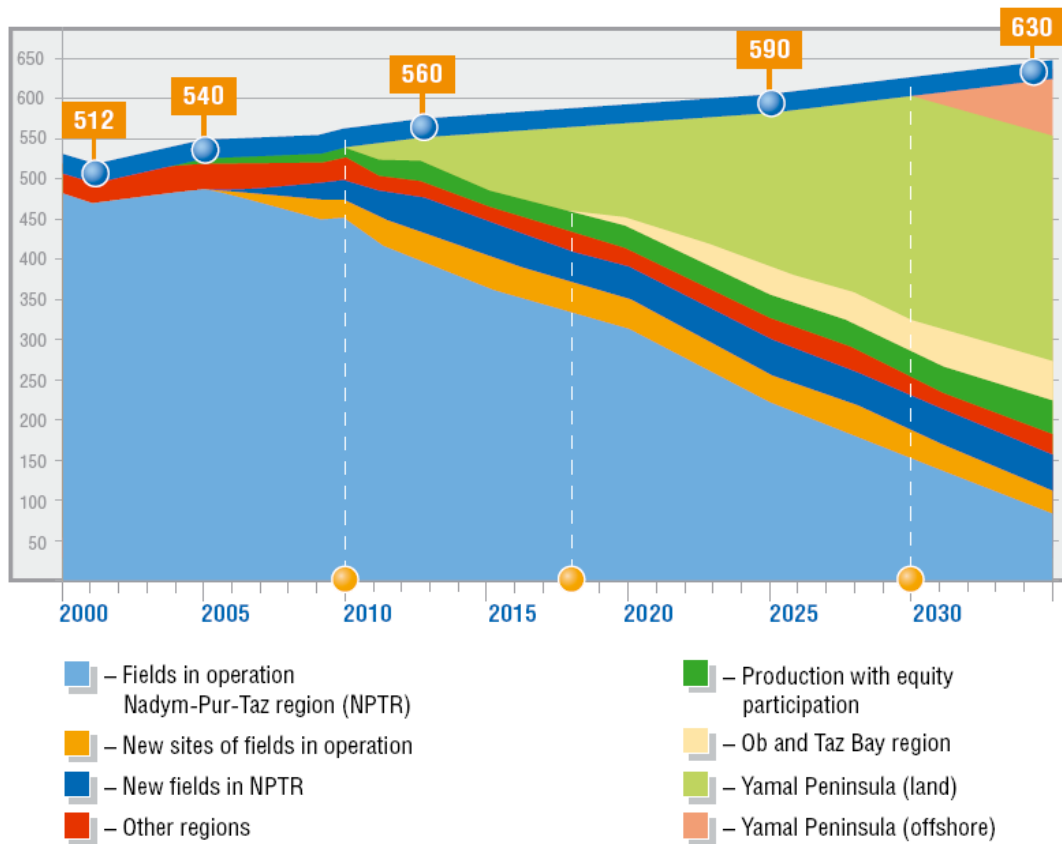
⁴ Stern 2005, pp. 201-4.

⁵ The name of the field in Russian is Bovanenkovo or Bovanenkovskoye. However, because it is widely known as Bovanenko in western literature this form (which does not exist in Russian) is used throughout the paper.

⁶ Gazprom Yamal Brochure.

2008, drawing attention to the substantial uncertainties which lie ahead for the Russian gas balance.

Chart 1: Gazprom’s Production Projections to 2030



Source: *Gazprom in Questions and Answers 2007*, p.28. <http://eng.gazpromquestions.ru/index.php?id=7>

The Russian Gas Matrix

In a study published in early 2009⁷, I argued that the Russian gas balance needs to be viewed as a matrix with:

- three major supply sources: Gazprom production , non-Gazprom Russian production and Central Asian imports;
- and three major markets: Russian demand, exports to CIS countries and exports to Europe.

⁷ Stern 2009.

Table 1: The Russian Gas Matrix: major building blocks (2008 data)*

SUPPLY SOURCES	Bcm	MARKETS	Bcm
GAZPROM PRODUCTION	550	RUSSIAN GAS DEMAND (Unified Gas Supply System UGSS)	353**
NON-GAZPROM PRODUCTION	114	EXPORTS TO CIS COUNTRIES	92
CENTRAL ASIAN IMPORTS	61	EXPORTS TO EUROPE	159

*major building blocks only, total supply is very different to total markets principally because of: gas used for transportation, net changes in storage, gas used outside the UGSS in Siberia and in the Far East; ** Gazprom figure of sales delivered to customers in Russia via the UGSS; ***long term contract sales only, total European sales were 189 Bcm.

In the 2009 study it was concluded that the size of the inputs and outputs was such that the general consensus of western commentators – that a decline in Gazprom production would mean that the company would not be able to meet its European export commitments – was, at best, misleading in the context of a Russian domestic market which is substantially in excess of its export market. It was further argued that if Gazprom’s balance became extremely tight – which it was suggested could happen around 2011, especially if the Bovanenko field did not start production that year as intended – the consequences would be felt mainly in the Russian and CIS markets, rather than in Europe with its long term gas contracts containing international arbitration clauses providing for financial damages in the event of non-delivery. The main consequence for Europe of a tightening in Gazprom’s supply availability seemed likely to be the disappearance of short term Russian sales, as the company restricted its deliveries to obligations under long term contracts.⁸ All of the judgements on short term supply availability need to be drastically revised in the light of events since September 2008.

The Russian Gas Balance: 2009-2012

Table 2: Russian Gas Production, Demand, Exports and Imports in the First Half of 2009

	First Half 2009	First Half 2008	% change
Exports outside CIS (Europe)	60.4	89.1	-32
Exports to CIS	20.8	45.1	-54
of which; Ukraine	8.2	28.3	-71
Total Exports	81.2	134.2	-39
Sales to Russian customers via UGSS	176.2	187.8	-6
Russian Production	216.4	289.2	-25
Imports from Central Asia	23.7	30.7	-23

Source: *Interfax Russia & CIS Oil and Gas Weekly*, July 16-22, 2009, p. 16

⁸ An inexact estimate of short term sales can be seen in the difference between long term contract sales and total exports in Table 1.

Starting around November 2008, demand for gas fell substantially in Russia, CIS countries and Europe. While accurate demand data are notoriously difficult to obtain even for previous years, let alone months, demand for gas in Russia (on a non-temperature corrected basis) fell by 6% during the first half of 2009 compared with same period in 2008 (Table 2).⁹ If this continues for the full year, it would mean a drop of 23 Bcm of gas demand. Russian deliveries to CIS countries in the first half of 2009 fell by 25 Bcm of which Ukraine accounted for 20 Bcm (and Belarus for most of the rest) due to severe economic recession. Although exports are expected to recover in the second half of the year, it appears that total exports to CIS countries will decline by a minimum of 30 Bcm in 2009. As far as Europe is concerned, Russian gas deliveries were down by nearly a third in the first half of the year due to a combination of: the January crisis which cut off nearly 80% of supplies for two weeks; economic recession, and the long lags in the long term contract price clauses, which caused Russian gas to be more expensive than alternative sources.¹⁰ The General Director of Gazprom Export expected sales of 142 Bcm of long term contract gas in 2009 compared with nearly 159 Bcm the previous year.¹¹ Adding all of these market reductions together suggests that total demand for Russian gas in 2009 will decline by 60-80 Bcm. How long these markets will take to recover depends on “big picture” assumptions about the course of the global economic recession. However, Russian government projections are showing a weak and uncertain “L or W-shaped” economic recovery; rather than a strong immediate “V-shaped” recovery.¹²

Table 3: Gazprom and Ministry of Economic Development Projections of Gas Production 2009-12 (Bcm)

	2008 Actual	2009	2010	2011	2012
GAZPROM*	549.7	450-510	507.5	510.6	532.8
RUSSIA (Total)**	663.6	580	623	630	649
RESIDUAL***	113.9	70-130	115.5	123.4	116.2

Sources: *Gazprom Press Conference 2009; **Ministry of Economic Development September 2009 (these projections are much higher than those given by in Ministry of Economic Development July 2009 which were 2010: 596 Bcm, 2011: 610 Bcm, 2012: 621 Bcm); *** Residual assumed to be non-Gazprom producers

These events have indeed caused supply problems – but not the type of problems which had been widely anticipated by the commentators cited in footnote 1 above. Table 3 shows projections for the period 2009-2012 by Gazprom of its own production, and the Ministry of Economic Development of total Russian production. Neither has a specific projection of non-Gazprom production. Having produced nearly 550 Bcm of gas in 2008, Gazprom announced production projections 40-110 Bcm lower in 2009, although a presentation by the CEO in

⁹ This compares with a fall in Gazprom sales to the domestic market over the same period of 26.5 Bcm. Gazprom ups gas exports to non-CIS countries in Q2, *Interfax Russia & CIS Oil and Gas Weekly*, August 13-19, 2009, p. 12.

¹⁰ For an account of some of these events see Pirani, Stern and Yamfimava, 2009.

¹¹ Gazprom Press Conference 2009 Exports.

¹² The Ministry of Economic Development’s “budget scenario” sees a fall in GDP of 8.5% in August 2009 followed by increases of 1.6%, 3.0% and 4.3% in 2010, 2011 and 2012 respectively which would bring GDP back to approximately 2008 level by 2012 (Interfax 2009). This is very slightly more optimistic than July 2009 projections, Ministry of Economic Development 2009, p.8.

June 2009 suggested a range of 500-510 Bcm.¹³ The Ministry of Economic Development believes the fall in 2009 Russian production will exceed 80 Bcm – roughly equivalent to what was suggested above might be the drop in market demand this year. Neither projection sees total production returning to pre-crisis levels prior to 2012, but non-Gazprom production, shown as a residual figure in Table 2, could return to 2008 levels relatively quickly after a hiatus in 2009.

Gazprom faces an even more acute situation in Central Asia, where it has long term contracts for the purchase of annual supplies of gas in excess of 60 Bcm/year with, in particular, Turkmenistan. Since April 2009, an interruption in Turkmen deliveries – originally caused by an explosion on one of the major pipeline networks – escalated into a dispute about volumes and especially prices about which no agreement had been announced as this paper was completed.¹⁴ Having promised Turkmenistan a fixed European-related price for 2009, Gazprom found itself unable to take large volumes at these prices without suffering substantial losses. Depending on the extent to which it can renegotiate prices to (what it considers) acceptable levels, domestic Russian production may need to be further reduced.

The Supply, Investment and Demand Outlook 2009-12

The Yamal Peninsula and Ob-Taz Bay

Table 3 shows that in 2012 Gazprom sees its own production at 533 Bcm, still substantially below the 2008 level of 550 Bcm. Is this because of its projection of gas demand or because it has not invested in new supplies?¹⁵ As noted above, the major speculation about the future of Gazprom production rests on a judgement of how quickly (and successfully) the new supergiant fields on the Yamal Peninsula, starting with Bovanenko, can be brought on stream, followed by the smaller Ob-Taz Bay fields. Crucial to this is the transmission system for the gas which is substantially more technically complex than the production phase. Until mid-2009 we had an overview, but little detail, of the plans to transport Yamal gas to markets; given the technical complexity of the pipeline phase, this lack of detail was potentially worrying.

At the 2009 Annual General Meeting however, Gazprom's deputy CEO in charge of production confirmed important additional detail of the Yamal Peninsula transportation programme. The first phase will be two 1420mm pipelines from Bovanenko across Baidaratskaya (Baidarat) Bay to Ukhta operating at extremely high pressure (120 atmospheres) and, carrying up to 60 Bcm/year of gas each, which will allow the target of 115 Bcm/year of production to be achieved. Production will then be increased at Bovanenko (to 140 Bcm) and subsequently at Kharaseveyskoye and other fields, requiring an eventual six

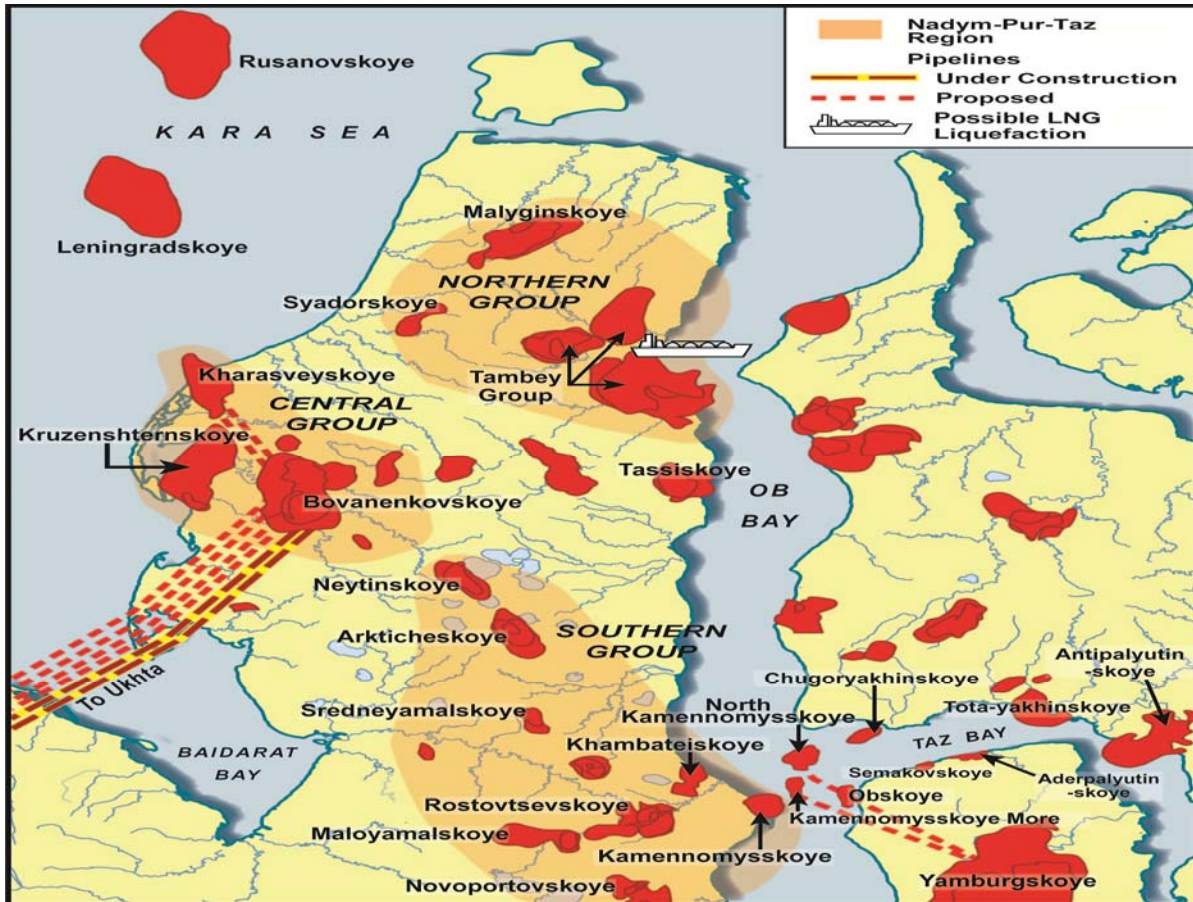
¹³ Miller Press Conference 2009.

¹⁴ Although there were suggestions that agreement was imminent and deliveries could restart in November.

¹⁵ Ananenkov asserted that Gazprom could produce 600 Bcm in 2009 if needed. Gazprom Press Conference 2009 Production.

pipelines in the Bovanenko-Ukhta corridor (Map 1).¹⁶ A very important qualification made by Gazprom as to how big the capacity of the corridor will become, and how quickly it will build up, is the existence of markets able to pay for the gas.¹⁷

Map 1: The Yamal and Ob-Taz Bay Fields and Planned Transportation Network



Source: OIES

Pipelines from the Ob-Taz Bay – starting with North Kamennomysskoye and Kamennomysskoye More fields – with a capacity of 75 Bcm/year, will be built to connect to the Yamburg fields. This will be a conventional transportation system using the existing infrastructure. Production is scheduled to commence around 2015.

Thus Gazprom’s roadmap for gas supply development over the next several decades is now clear: all western and northern Yamal Peninsula gas will be evacuated via a new high pressure transportation corridor across Baidarat Bay to Ukhta¹⁸; while south western Peninsula and Ob-Taz Bay gas will use the conventional route via Yamburg (Map 1). But the technical challenge of this, the largest conventional natural gas development of the early

¹⁶ Gazprom Yamal Brochure 2009 projects 75-115 Bcm by 2015, 135-175 Bcm by 2020, 200-250 Bcm by 2025 and 310-360 by 2030.

¹⁷ Gazprom Press Conference Production 2009.

¹⁸ Aside from the Tambey gas anticipated to be evacuated as LNG; see the section on the Yamal LNG project below.

decades of the 21st Century, should not be under-estimated. Developing Bovanenko and creating a new pipeline network across Baidarat Bay was perhaps the highest risk production strategy which Gazprom could have adopted. A much lower risk strategy (advocated by this author) would have been to assign a much larger role to non-Gazprom production and to start by developing the Ob-Taz Bay fields and thereafter “back into” the Yamal Peninsula.¹⁹ The “good news” about the economic recession for Gazprom’s Yamal development is that the delay in the Bovanenko start-up gives it another year (and perhaps longer) before it needs to bring the field into production.

The Investment Outlook

As far as investments are concerned, the first version of Gazprom’s 2009 investment programme envisaged Yamal Peninsula-related investments of RR210bn or about \$6.5bn: RR80 bn for construction of facilities at the Bovanenko field; RR19.2 billion on construction of the railway, and RR110bn on the Bovanenko-Ukhta pipeline network.²⁰ By July 2009, the reduction of Gazprom’s investment programme included a reduction of Yamal-related investment by RR62bn to RR147 bn.²¹ It is likely, but unconfirmed, that the result will be a delay in investment at the field and in the construction of the pipelines.²² Any delay in pipeline construction may be a mistake, as it will be very useful for Gazprom to have an additional year to see whether the pipelines which have been laid – in particular the sections across Baidarat Bay – are able to withstand the considerable pressures caused by the instability of the ice conditions, and the combination of shallow water and soft seabed conditions.

It has been suggested that Gazprom will not succeed in developing the Yamal fields using its own technology and Russian-made equipment, and will need to rely on foreign companies.²³ But it seems highly unlikely that Gazprom would continue to press ahead with drilling wells, laying pipelines and building the Ob-Bovanenko railway without a very substantial expectation of success.²⁴ Moreover, it is uncertain what foreign companies would be able to contribute to Yamal Peninsula development. Russian engineers are the world leaders in on-land Arctic pipeline technology; nowhere else in the world has any significant similar gas development been undertaken let alone on the scale of north west Siberia.²⁵

¹⁹ Stern 2009.

²⁰ Loan Notes 2009, p.87.

²¹ Initially Gazprom suggested that investment in 2009 might be reduced by as much as 30%. Government approves Gazprom’s revised investment programme for 2009, *Interfax Russian and CIS Oil and Gas Weekly*, July 9-15, 2009, p.16. For more details of the investment programme see Simon Pirani, *The Impact of the Economic Crisis on Russian and CIS Gas Markets*, Pirani: 2009 forthcoming.

²² Annanenkov suggests that much of the Yamal labour force working at Bovanenko and the pipelines could be moved to Far Eastern projects.

²³ For example Noel 2009, p.7, quoting Norwegian sources.

²⁴ There is no suggestion that railway construction will be delayed. In September 2009, Gazprom announced the completion of the Yuribey River crossing and that the remaining 100km will be completed by September 2010. *Unique bridge crossing of Yuribey River completed in Yamal*, Gazprom Press Release, September 24, 2009.

²⁵ This is of course not the case for *offshore* development or for LNG, which accounts for the participation of foreign companies in projects such as Shtokman and Yamal LNG.

However, this does not mean that Yamal Peninsula gas development will be straightforward and predictable. The technically groundbreaking nature of Gazprom's Bovanenko development needs to be fully appreciated. While there has been discussion of operating pipelines at 120 atm pressure elsewhere in the world, to my knowledge this has not yet happened and certainly not on the scale which is envisaged for this development. Nevertheless, technical literature suggests that this pressure and throughput is well within the parameters envisaged by modern materials.²⁶ Gazprom has supervised Russian pipe mills in the production of specialised pipe for the Bovanenko-Ukhta corridor.²⁷

There is no reason why the new higher pressure pipelines should not work as designed, but this will be a world-first carried out on a very large scale in by far the most challenging Arctic conditions ever encountered by even the Russian gas industry. Maintaining the physical stability of the pipelines in the northern part of the corridor between the field and the southern shore of Baidarat Bay is the most difficult challenge, and more detail is needed from Gazprom to explain how these problems have been overcome and to give confidence that the development will proceed on the schedule which has been announced.

The Yamal LNG Project

Following the creation of a joint venture by Gazprom and Novatek, in September 2009 Prime Minister Putin suddenly summoned CEOs from a range of international companies for discussions on what has become known as the "Yamal LNG project".²⁸ Based at the Tambey fields on the north west of the Peninsula (see Map 1), this project had been sporadically mentioned throughout the 2000s but in very general terms. Not to be confused with either the Bovanenko development, or an LNG project based at the Kharaseveyskoye field (on the east of the Peninsula which appears to be have abandoned), Yamal LNG is still at the stage of definition. It is not clear whether there was any firm commitment by companies attending the September 2009 meeting, but in any case, this commercially and technically complex project would require at least a decade to complete.

The Shtokmanovskoye (Shtokman) Development

It may be that the sudden appearance of Yamal LNG is connected with anticipated delays in developing an LNG project at the supergiant Shtokman field in the Barents Sea. While this is a very large project, it is not on the scale of Yamal Peninsula production - the first stage will be 23.7 Bcm/year, with subsequent phases bringing production up to a possible 95 Bcm/year, (compared with 115 Bcm/year for the first phase of Bovanenko). It is mainly aimed at export markets, notably the second string of the Nord Stream pipeline and a new LNG terminal at

²⁶ Bangert 2006, Table 2 suggests that a 60 inch pipeline of X80 steel (equivalent to Russian K65) standard, operating at 104-130 atm pressure (with appropriate quality steel and wall thickness) would deliver an annual throughput of 58-67 Bcm. This would suggest that a 56 inch pipeline operating at 120 atm should be capable of transporting 60 Bcm/year. I am grateful to Bob Handley of Gas Strategies for drawing my attention to this source.

²⁷ *Gazprom Yamal Brochure 2009.*

²⁸ Novatek Press Release 2009. Platts European Gas Daily 2009.

Teriberka near Murmansk.²⁹ This project is likely to be substantially delayed from the current, somewhat unrealistic, forecast of first production in 2013-14, but the main impact of any delay will be on Gazprom's Atlantic LNG export ambitions.

Balancing Investment in Supply and Demand 2009-2012

Given the size, complexity and uncertainties related to the different elements of the Russian gas matrix (Table 1) nobody should be confident of stating that future gas availability will or will not be sufficient to cover the country's internal requirements and external obligations over the next decade and beyond, even if they have conducted detailed research on each element of the matrix. But claims that Gazprom would not have enough gas to fulfil its European contractual obligations in the late 2000s and early 2010s always appeared overstated and, with the impact of the current economic recession on gas demand in CIS countries and Europe, are likely to be very wide of the mark for at least the period up to 2012. While Gazprom's exports to Europe have indeed fallen significantly in the first half of 2009, this has been due to a combination of falling demand and unattractive prices relative to competing gas supplies. So much so that – instead of worrying whether Gazprom could deliver enough gas – in late 2009, European buyers have not taken sufficient volumes and are trying to renegotiate the terms of the take or pay clauses in their contracts.³⁰ As a result, Gazprom may have a great deal of gas available to sell to Europe on short term contracts should it wish to do so.

Was it just Gazprom's "good fortune" that a global recession arrived just at the time when it otherwise might have been in trouble due to lack of supply? Perhaps, but as noted earlier, the size of Gazprom's gas balance always gave it some room for manoeuvre; probably more than most commentators appreciated. Moreover, if Gazprom had made the investments to start the Bovanenko field in 2011 or even earlier - as many of its critics were urging – it would during 2009-2012 be facing an even larger problem of shutting in production, having invested as much as \$20bn on a gas delivery system that turned out not to be needed for several years. In view of this outcome, it may not be surprising that Gazprom takes little notice of unsolicited advice from western critics.

But will the same concerns about adequacy of gas and lack of investment return post-2012? The answer to this will depend very much on whether demand in Gazprom's three markets – domestic, CIS and European – will have returned to 2007-08 levels. The 2012 projections in Table 3 suggest that neither Gazprom nor the Russian government are expecting this outcome. Indeed if markets are slow to recover, and Central Asian imports and non-Gazprom production recover quickly from 2009 levels, there will be questions as to whether Yamal production and transportation investment should be further delayed.

Equally important will be developments on the demand side of the Russian gas balance. Available data suggest that gas demand fell by 6% in the first half of 2009, while industrial production and GDP fell by 15% and 10% respectively. The demand data is not temperature-

²⁹ Gazprom Shtokman Brochure 2009; Stern 2009.

³⁰ Credit Suisse 2009.

corrected and since the early months of 2009 were substantially colder than the previous year, may understate the extent of the decline. From the overall economic picture, gas demand appears to have fallen by much less than would have been expected.

Much of the strongest criticism of Russian energy and gas policy over the past decade can be levelled at the relative failure to reduce energy demand by means of price reform and capital stock replacement. Despite previous ambitious strategies and programmes of energy saving and efficiency³¹, results have been modest and progress, which was under way in 2008, has been significantly set back by economic crisis. Russia cannot develop a successful 21st century economy with capital stock, more than 70% of which still dates from the Soviet era. Large scale capital stock replacement will dramatically reduce both overall energy and gas demand. Old gas using plant will either not be replaced or will be replaced with plant which will use at least 40% less gas for the same output.

Work by Mitrova, completed before the economic recession, cast doubt on whether, for a number of reasons, significant demand reduction could be achieved prior to 2015.³² Now that such a reduction has unexpectedly been achieved, a key question is how fast demand will rebound with economic recovery.³³ With recession reducing the volume of investment finance available from both domestic and foreign sources, the outlook for rapid capital stock replacement is poor. While criticism of investment priorities has concentrated almost solely on the supply side of the gas matrix, the demand side may be much more important than is generally realised.³⁴ But this is not, or at least not solely, a gas or energy-specific problem, it is a problem of industrial restructuring and economic reform.

Why are western commentators warning about lack of investment?

Constant western warnings about lack of investment in Russian gas supply logically stem from concern about Gazprom's ability to honour its long term contractual commitments to European customers.³⁵ They can hardly reflect European intentions to import more Russian gas since, in the wake of the January 2006 and 2009 crises, one of the main topics of European energy security discourse has been how diversification can reduce European dependence on Russian gas supplies.³⁶ And despite many "warnings" from commentators concerned with Russian geopolitical aggression, even if Europe was to suddenly reverse its

³¹ For example Russian Energy Strategy 2003.

³² Mitrova 2009.

³³ The OIES natural gas programme will be examining this issue in more detail during 2010. Pirani 2010 forthcoming.

³⁴ This is often placed in the context of carbon reduction (IEA 2006) but is a very important energy issue in its own right for Russia.

³⁵ Gazprom CEO Miller made the point in an interview with the Financial Times that long term contracts mean that the company knows what it has to deliver. Hoyos and Crooks 2008. Perovic 2008 has raised the issue as to whether investment is sufficient to meet European needs and those of Gazprom's "new Asian customers". My response would be that, aside from Sakhalin LNG sales (investment for which has already been made) Gazprom is unlikely to have substantial new Asian gas customers (aside from those in its domestic Far East republics) prior to 2020, despite the framework agreement for two pipelines to China signed in October 2009.

³⁶ See EU 2009.

current views and decide to increase its long term dependence on Russian gas supplies, it is not certain that additional long term commitments (as opposed to short term sales) would be readily forthcoming from the Russian side.³⁷ But as we saw in 2006 and 2009, the immediate problems of delivering contracted volumes of Russian gas centre on transit relations with CIS countries.³⁸ Contrary to the problems of availability of Russian gas, transit problems have been heightened by the impact of economic recession, in particular on the Ukrainian economy.

Gazprom is proposing to improve security of transit to European countries by investing in transit diversification pipelines such as Nord Stream and South Stream. new pipelines would improve *overall transit security* as they would help guarantee the delivery of Russian gas to Europe against exactly the type of transit interruptions experienced in 2006 and 2009. But many in Europe oppose these investments for geopolitical and strategic reasons, suggesting that they would allow Russia to use gas to exert economic and political pressure on individual western CIS countries and EU member states. According to this reasoning, security of supply for individual countries might be at greater risk as Gazprom could isolate them, cutting off their supplies, while still being able to meet contractual obligations to third countries by alternative pipeline routes.

Such arguments need to be carefully separated into a discussion of:

- Old EU member states – where the January 2009 crisis demonstrated that old member states withstood the supply interruption without difficulty³⁹;
- New EU member states where the crisis demonstrated that only in south east Europe (particularly Bulgaria) was there serious vulnerability;
- Non-EU member states in south eastern Europe some of which (particularly Bosnia and Serbia) were extremely badly affected⁴⁰;
- Ukraine and Belarus, where a large number of political and economic considerations – gas and non-gas - are involved which are different for each country.

In the case of EU – and particularly new EU - member states, the main question is how Brussels can help ensure natural gas security, and extend this to Energy Community Treaty countries, by promoting greater interconnection and alternative supplies of pipeline gas and LNG. Broader geopolitical relations between Russia and European countries need to be discussed in a different framework involving NATO and security considerations. Nevertheless, delaying or preventing these pipeline investments may be contributing to European security problems associated with transit risks to Russian gas supplies.

³⁷ This is one pre-recession judgement from Stern 2009 that remains robust. See also Solanko and Sutela 2009.

³⁸ Stern 2006, Pirani, Stern and Yamfimava 2009.

³⁹ Of course had the interruption been longer this outcome might have been different.

⁴⁰ Kovacevic 2009.

Criticism of lack of investment therefore requires some clarification of European attitudes towards the investment and security aspects of Russian gas supplies. If Gazprom reduces or delays investment in supply, there is concern that it is neglecting its future obligations towards European customers despite the fact that in the short term, it is reducing both its own and independent production and cutting back imports from Central Asia. Gazprom is also accused of being an insecure gas supplier to Europe as a result of the stoppages in January 2006 and 2009. But when it proposes investments in pipelines which could provide greater security for European consumers against transit interruptions, it is accused of geopolitical aggression against CIS countries and new member states, and a desire to divide European countries in pursuit of energy domination. The Russian government certainly has political (and geopolitical) motivations in relation to gas exports, but these are complicated by commercial considerations and, as noted above, need to be argued on a country by country basis.

Conclusions

This paper has drawn attention to a complete change in the short term outlook for Russia gas supply which emerged due to the global recession which commenced in 2008 and reduced levels of gas demand in Russia, CIS countries and Europe. Concern about Gazprom's ability to deliver volumes contracted to European buyers has been replaced by the latter asking for relief from their contractual obligations to take these volumes. As a result, Gazprom has been forced to cut back its own production, and that of other Russian producers, and no gas has been imported from Turkmenistan for six months due to a contractual dispute.

In addition, this paper has drawn attention to growing clarity of intentions in relation to the future of Russian gas production on the Yamal Peninsula. Gazprom is well advanced on what will be the world's largest conventional natural gas development of the early part of the 21st century. This is Gazprom's supply roadmap for the next 20-30 years. It can be argued that this is the wrong roadmap; that alternative supply options would have been cheaper and less technically risky. A lower risk strategy would have been to assign a greater role to non-Gazprom companies and for Gazprom to start at the Ob-Taz Bay fields and "back-in" to the Yamal Peninsula. It can be argued that Gazprom has been "lucky" that economic recession has relieved anticipated supply pressures for at least the next 3 years, giving it more time to ensure that the Bovanenko field development will succeed. But it is illogical to accuse Gazprom of "not investing" in new supply without detailed discussion of the different supply and demand elements of the Russian gas matrix and how these may evolve over the next decade. Indeed had Gazprom been ready to produce Bovanenko gas before 2011, as the western consensus dictated it should, it would now be in far greater financial difficulty.

In the context of reduced demand in all of Gazprom's markets, the consequences of supply problems up to 2012 are far less serious than they seemed up to 2008. Uncertainties remain about Yamal Peninsula gas development but, with pipe being laid and the railway approaching the Bovanenko field, there seems no reason for immediate concern unless it is

backed by detailed technical information of a type which, as far as this author knows, is not available from any source – western or Russian.

Some may wish to argue that the problems identified prior to 2008 will return post-2012, and that Gazprom will face difficulty in meeting its contractual obligations in Europe. Those holding this view are again referred to the need for detailed analysis of the different elements of the matrix (Table 1); in particular the difficulty of projecting post-recession levels of Russian and CIS gas demand. In addition, future European gas demand is also not easy to predict; it may be that a combination of reduced economic growth and increased low carbon energy supplies will mean that demand may not increase significantly beyond 2008 levels prior to 2020.⁴¹ In the shorter term, there is confusion in Europe about the security aspects of Russian gas, with concern about reliability of supplies because of transit problems, combined with opposition to investments in new pipelines which would improve this situation by avoiding transit countries. The potential for criticism of Russian gas policy in the late 2000s is substantial, with the slowdown in price and market reform at the top of that agenda. But continual unfocussed criticism about lack of investment obscures, rather than illuminates, the complexity of the Russian gas situation.

⁴¹ Honore 2009 forthcoming.

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