

How Post-Soviet Transition and Economic Crises Shaped the Russo-Ukrainian “Gas Wars”

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Introduction

The paper seeks to explain the “gas wars” between Russia and Ukraine, the underlying difficulties of Ukraine’s natural gas sector that have fuelled them, and how these difficulties might be addressed, in the context of broader economic and political changes. The paper is largely based on an article drafted in February and published in *Osteuropa*.¹ To cover the main developments this year (the election of Yanukovich, the April agreement between Russia and Ukraine and the new IMF loan programme) I have inserted a note after section 8, and I have updated the conclusions, but I have left numbered sections 1-8 as they were, only inserting a note (in italics) where things have changed materially. (Naturally were the paper considered for publication it would be further overhauled and updated.)

The paper starts with an outline of how the collapse of the Soviet Union and the transition to capitalism affected the gas sector, and argues that legacies of transition are a cause of current problems. Ukraine’s gas balance, its transit business and government policy on gas are described. Then an account is given of Russo-Ukrainian gas disputes – first, those during the “oil boom” (2000-08) including the “gas war” of 2006; second, the more serious “gas war” of 2009 that broke out during the world economic recession. Finally the problems facing Ukraine’s gas sector in 2009-10 are outlined, and conclusions presented.

1. Ukraine’s gas sector: post-Soviet transition unfinished

The roots of Ukraine’s problems with natural gas – its over-consumption, its heavy dependence on imports, and its disputes over gas with Russia – lie in the Soviet period. Next year it will be two decades since the Union broke up. While the Ukrainian economy has changed considerably in that time (with the growth of the services sector, for example), unsustainably high levels of gas consumption and heavy dependence on gas imports remain. Furthermore, although over the last 20 years Ukraine has moved away from Russia both politically and economically (with much of its trade shifting to Europe, for example), both sides are stuck with the physical reality: Russia’s gas

¹ Simon Pirani, “Am Tropic: Die Ukraine, Russland und das Erdgas”, *Osteuropa* 2-4 (2010), pp. 237-256

export pipelines, built in Soviet times, run through Ukraine, and Russia is dependent on Ukraine's provision of gas transit services. These dependencies – Ukraine's on Russian gas, Russia's on Ukrainian transit – are important causes of the series of disputes over gas that climaxed in 2009.

Gas produced in Ukraine was a key factor in the Soviet Union's post-war economic expansion. In the 1950s, western Ukrainian fields accounted for nearly half the total Soviet output of 5-6 billion cubic metres (bcm) per year. In the 1960s, much higher output was achieved from the Shebelinka deposit in central Ukraine, peaking at 68.7 bcm (23.8% of Soviet output) in 1975. But by that time, the large western Siberian fields had come on stream. For the remaining 15 years until the Soviet Union collapsed, Siberian output rose, and Ukrainian output fell constantly, to about 20 bcm/year. Late Soviet history played a cruel trick on Ukraine: the more gas-intensive its economy became, with consumption rising to 118.8 bcm in 1990, the more it substituted gas produced locally for that transported from western Siberia and central Asia. This laid the basis for post-Soviet Ukraine's heavy dependence on imported gas. The proportion of imports in Ukraine's gas balance increased from 56% in 1985 to 81% in 1992, its first year of independence.² It has fallen since then, but is still very high: in 2006-08 it was 70-72%.

In the early post-Soviet period, Ukraine and Russia faced shared problems: economic slump, the need to rebuild trading relations, stimulation of "shock" reform by international institutions and the emergence of especially parasitic forms of capitalism. Ukraine bore an extra burden, dependence on imported energy – which now, after the internal accounting system for intra-Soviet fuel transfers was superseded by international trade, had to be paid for in hard currency. The new, relatively weak Russian state, for its part, relied heavily on revenues from sales of gas to Europe, especially since Gazprom, the national gas company, remained under state control (albeit tentative at some times), while most oil and metals industries moved rapidly into the private sector. Four-fifths of the gas pipeline capacity to Europe, which had been built in Soviet times, passes through Ukraine; the remaining one-fifth goes via Belarus. So Ukraine's dependence on gas imported from or through Russia was somewhat offset by Russia's dependence on Ukrainian transit of gas exports to Europe.

A cycle of problems between Russia and Ukraine persisted through the 1990s: large-scale deliveries to Ukraine of relatively cheap gas – used, as it was in Russia, to sustain a perilously weak state in the face of potential social upheavals and a perceived threat of collapse; accumulation of Ukrainian debts to Russia, linked to domestic non-payment; theft of gas from the transit system; and Russian

² Jonathan Stern, *Soviet Natural Gas Development to 1990: the implications for the CMEA and the West* (Lexington, Mass., Lexington Books, 1980), pp. 26–30; IEA, *Natural Gas Transportation and Regulation* (Paris, 1994), p. 335; Simon Pirani, *Ukraine's Gas Sector* (Oxford, OIES, 2007) pp. 17–18.

pressure on Ukraine to hand over infrastructure in return for debts. Ukraine's largest debts for Russian gas were accumulated immediately after independence (\$4-4.5 billion in 1991-94) – and they would have been larger still, but for the slump, which caused a sharp decline in gas consumption (by 29% from 118.8 bcm/year in 1990 to 85.0 bcm/year in 1996). The problem of debts was exacerbated by the predominance of barter arrangements, i.e. mainly payment by Russia with gas for transit services, but also payment e.g. by Ukraine with manufactured goods for central Asian gas. Whereas barter in general receded from the former Soviet economies after the 1998 ruble devaluation, the Russo-Ukrainian gas-for-transit arrangement persisted until 2006.³

From 1994, Ukraine's economy and state finances were stabilised, and the main political institutions began to function. But little progress was made in energy sector reform, let alone implementing an energy strategy. The gas sector was dominated by increasingly powerful privately-owned trading companies. In the import business, the main player from 1996 was Itera of Russia, which from 1998 supplied all imported gas except that supplied by Gazprom in lieu of transit fees. From 1999 Itera shipped Turkmen gas to Ukraine.⁴ In the chaos that followed the break-up of Soviet industrial organisations, control of gas inputs gave a powerful advantage; some of the traders that competed with Itera in the domestic gas market became the founders of Ukraine's most powerful business empires.

An impetus for the expansion of these groups was provided by the gas trading concession system, established in 1996, under which selected traders were awarded exclusive rights to import gas and sell it in areas of Ukraine assigned to them, and this business was unbundled from transmission and distribution. The measures, for which the World Bank pushed strongly, were designed to demonopolise the market, but they ushered in a traders' cartel. With business regulation weak to non-existent, and payment arrears prevalent, groups associated with the selected traders profited from barter and tolling schemes and used debt-for-equity swaps to acquire industrial assets. The scheme, a byword for post-Soviet corruption, was abandoned after two years. In 1998 a vertically-integrated state-owned company, Naftogaz Ukrainy, was set up in its place; it embraces almost all gas and oil production and transport, and gas supply and distribution.⁵

³ Pirani, *Ukraine's Gas Sector*, pp. 18–21; Gregory V. Krasnov and Josef C. Brada, “Implicit subsidies in Russian-Ukrainian energy trade”, *Europe-Asia Studies* 49:5 (1997), p. 828; IEA, *Ukraine Energy Policy Review 2006* (Paris, 2006), pp. 62–64.

⁴ Stern, Jonathan, *The Future of Russian Gas and Gazprom* (Oxford, Oxford University Press, 2005), pp. 73–74; Pirani, *Ukraine's Gas Sector*, pp. 20–22.

⁵ For a discussion of these issues, see Margarita Balmaceda, *Energy Dependency, Politics and Corruption in the Former Soviet Union: Russia's power, oligarchs' profits and Ukraine's missing energy policy, 1995-2006* (London, Routledge, 2006), and especially pp. 45-61.

Ukraine's economic recovery began in 1999–2000, stimulated by consumer demand growth both domestically and in Russia, its main export market, and by the increase in the world prices of steel, chemicals, and other exports. But Ukraine remained one of the world's most energy-intensive economies. Moreover, gas has the largest, and growing, share of total primary energy supply: 47%, compared to 23.6% for coal, 16.2% nuclear, 12.4% for oil and 0.9% for renewables.⁶

2. The gas balance

During the 2000s, the main elements of supply and demand in Ukraine's gas balance stabilised. In the six years 2003-08, Ukraine's gas *demand* averaged 73.6 bcm/year. Roughly, 24-29 bcm/year was consumed by industry, including metals (9-10 bcm/year) and chemicals (8-9 bcm/year); 6-9 bcm/year by the power sector, supplementing coal, which is the main fuel; 12-13 bcm/year by the district heating sector; and 19-22 bcm/year by residential and public sector consumers. A further 7-8 bcm/year was used for technical purposes, i.e. mainly as fuel for compressor stations on the pipelines. Demand fell slightly from 2006, as gas prices rose, but really sharp falls came only in 2009, and only in industry, which contracted sharply as a result of the recession.

There are essentially two sources of *supply*: (1) Ukraine's own production, from both onshore and offshore fields; and (2) gas imported from and through Russia. Although Ukraine's gas production, of around 20 bcm/year, is far from negligible in international terms, it covers little more than a quarter of demand. Even if production were to increase in line with the most optimistic projections, it will still remain secondary to imports. As for imports, all the pipelines bringing gas to Ukraine come from Russia, or from Russia via Belarus. Gas from Turkmenistan, and small quantities from Uzbekistan, were imported to Ukraine until the mid 2000s. But such sales can only be arranged with Russia's agreement, since the gas has to transit through Russia, and they stopped when this agreement was withdrawn. From the mid 1990s, Turkmenistan sold gas via traders to Ukraine, with Russia receiving only transit fees for the gas to cross its territory; from 1999, Naftogaz Ukrainy, the newly-formed Ukrainian national gas company, began to buy these volumes at the Turkmen border and have them shipped through Russia by traders; but in 2005 Russia, as part of its drive to centralise the gas trade discussed below, succeeded in severing the direct commercial relationship between Ukraine and Turkmenistan. This is unlikely to be resurrected in the foreseeable future.

⁶ Ukraine's government states its GDP energy content, as a proportion of the world average, as 2.61; Russia's is 2.47, Poland's is 1.0. See *Energy Strategy of Ukraine for the period until 2030* (Kiev, 2006), p. 9. On fuel shares of TPES, IEA, *Ukraine Energy Policy Review 2006*, pp. 75–77.

Table 1. Ukraine's gas balance: an overview⁷

	2006	2007	2008	2009 (est.)	2010 (proj.)
Total	75.2	70.8	67.3	48.5	53
Consumption					
Industry	24.3	25.8	23.2	12	15
Power sector	8.6	8.4	7.5	4	5
District heating	12.8	10.5	10	9.7	10
Residential & public sector	21.4	19.1	19.6	18.3	18
Technical gas	8.1	7	7	4.5	5
Supply					
Imports	54.5	50.1	47.2	28.5	32.5
Own production	20.7	20.7	20.1	20.5	20.5

Source: fuel and energy ministry statistics/ *Energobiznes*/ author's projections

3. Gas transit

The Ukrainian gas transport network – one of the world's largest, with an annual nameplate input capacity of 280 bcm and output capacity of 175 bcm – is the main route for Russian gas exports to Europe. Ukraine also has Europe's second largest underground gas storage system after Russia; much of its 34 bcm capacity is close to Ukraine's western border and well placed to serve central European markets.

From the mid 1990s, Russia increasingly sought to gain ownership and/or management control of the gas transit network in Ukraine and other neighbouring states. This policy reflected both Russia's geopolitical aim of maintaining a sphere of influence in the former Soviet Union and the commercial aim of minimising costs and increasing efficiency of gas transit. Some Ukrainian governments were tempted to agree to such proposals, but all ultimately rejected it as strategically

⁷ The energy ministry's statistics, reflecting the integrated character of the former Soviet gas supply system, include total volumes that enter and exit the Ukrainian gas network, plus volumes pumped into and withdrawn from storage. Import figures have been extrapolated by the author, for simplicity of presentation. Full balances, including gas transited through Ukraine to other destinations, are presented e.g. in Simon Pirani, "Ukraine: a gas dependent state", in Pirani (ed.), *Russian and CIS Gas Markets and Their Impact on Europe* (Oxford, Oxford University Press, 2009), p. 98.

risky (as it would deprive them of an important bargaining counter in relations with Russia) and politically unpopular. However they also failed to manage transit fee income effectively and left insufficient funds for maintaining and upgrading the system. Following an attempted compromise which came to nothing (the formation of a Russo-Ukrainian pipeline consortium in 2002) and Ukraine's "Orange revolution", Russia concentrated on diversifying gas transit away from Ukraine. This policy will probably bear fruit with the commissioning of the Nord Stream pipeline in 2012.

In 2000-06, Ukraine transported an average of 129 bcm/year of Russian gas, on average 113 bcm/year to Europe and the remainder to Moldova and southern Russia. Between 2005 (when the gas-for-transit barter scheme was ended) and 2008, Ukraine received \$1.5-2.2 billion per year in transit fees, i.e. between a quarter and a third of its gas import bills of \$3.2-8.4 billion. Transit volumes fell to 115 bcm in 2007, as Russia began diversification by cancelling transit of gas to customers in southern Russia via eastern Ukraine; recovered to 120 bcm in 2008; and crashed, probably to about 90 bcm, in 2009, due to the collapse in European demand.⁸

4. Government policy

Government policy on the gas sector is nominally determined by the energy strategy adopted in 2006, but in practice has evolved pragmatically in reaction to the difficulties and crises described here. The energy strategy sets out targets under which the production of coal, nuclear energy and domestic gas will all be doubled by 2030 in order to reduce import dependence. It also includes an ambitious target for energy saving (rising to 223 million tonnes of oil equivalent, or one-and-a-half times' Ukraine's 2005 energy balance, by 2030). The document's critics argue that there is a lack of political will to implement the necessary regulatory and legal changes or raise the necessary investment. The International Energy Agency (IEA) criticised the government's target-based approach and commented that the energy-saving target is not matched by any specific demand-side measures. Some non-governmental organisations and academics argue that the gigantic energy-saving potential could start to be realised with targeted government support for practical measures, starting with cheap ones.⁹ In the four years since the strategy was implemented, the government has neither had access to the big financial resources needed to develop coal, nuclear or domestic gas on the scale proposed, nor considered in any detail how they might be raised, nor made significant progress on energy saving. In addition, frequent changes of government (three since the strategy

⁸ Total transit volumes fell to 64.9 bcm in the first nine months of 2009, from 86.9 bcm in the first nine months of 2008. These are the most recent figures available.

⁹ The government of Ukraine, *Energy Strategy of Ukraine for the Period Until 2030* (2006); IEA, *Ukraine Energy Policy Review* (2006), pp. 50-59

was adopted), long periods of stalemate in parliament and poor relations between the president and government have inhibited strategic thinking or action on this or any other issue.

The difficulties produced by rising import prices and disputes with Russia have stimulated some political discussion on reform of the gas sector, including the reorganisation of Naftogaz Ukrainy, and the reform of gas tariffs (which remain heavily subsidised for residential, public-sector and district heating customers). As a result of the economic crisis and the 2009 “gas war”, and under pressure from the IMF and European Union, the government adopted a programme to reform the gas sector, including separating-out Naftogaz’s transit, production and distribution businesses and moving towards legislation aligned to the EU’s energy directives. A programme of tariff increases aimed at bringing domestic prices into line with import prices by 2011 was also agreed by the government and international organisations.¹⁰ Once again implementation was fraught with difficulty: market reform legislation was drafted in 2009; the first planned price increases were postponed; and there was little sign of progress in the reorganisation of Naftogaz. *Note: the gas sector reform law was passed by parliament in June 2010, and a 50% increase in gas tariffs for households and district heating companies implemented in August 2010.*

5. Russo-Ukrainian gas disputes up to 2008

The context for the Russo-Ukrainian “gas wars” of the 2000s, which culminated in interruptions in gas supplies to Europe in January 2006, was formed by the relentless rise in oil prices between 2000 and 2008, and the concurrent economic recovery in Russia and Ukraine. The most serious dispute, in January 2009, came when this boom had ended. Oil prices rose steadily from about \$15/barrel (bbl) in 1998, with a brief pause in 2002, to \$60/bbl in 2006; thence they soared to a peak of more than \$140/bbl in 2008 before falling steeply, and then stabilising at about \$70/bbl, in 2009. Metals prices followed a similar trajectory; so did European gas prices, which are tied to oil prices by contract terms. In Russia the oil and commodities export revenues on one hand made possible the economic recovery, but on the other gave it a one-sided character, as Russia was over-dependent on these revenues. The recovery underpinned a government drive to assert increased control over the oil sector. Whereas in the 1990s the weak Russian state had struggled even to tax the oil sector effectively, the 2000s were characterised by an aggressive drive to return some privatised oil assets to the state, culminating in the Yukos affair of 2003-05, and by increased taxation of the oil sector. Putin articulated an ideology of state-guided capitalism that repudiated the extreme “free market”

¹⁰ Joint EU-Ukraine International Investment Conference on the Modernisation of Ukraine’s Gas Transit System, *Joint Declaration*, 23 March 2009; The government of Ukraine, *Memorandum of Economic and Financial Policies*, 31 October 2008 (published on the IMF web site)

enthusiasm of the 1990s. The corollary of this was Russia's more assertive geopolitical stance, articulated in then president Vladimir Putin's denunciation of US foreign policy at Munich in February 2007 and in the military conflict with Georgia in August 2008.

These changes were also reflected at Gazprom, Russia's state-controlled gas company that accounts for five-sixths of production and all exports. Gazprom, Russia's largest company, was transformed into a flagship for state-directed capitalism. In 2006, after Gazprom's share structure was regularised with a 50.1% state holding, ownership rules adjusted and additional shares sold on international markets, its market capitalisation rose several times over to more than \$250 billion, making it at that time the world's third largest company by that measure. Its management, with senior posts now taken by Putin's appointees, moved to introduce the commercial methods prevalent in the oil and gas industry internationally.

The drive to turn Gazprom into an energy company funded on, and integrated with, international markets, implied ending heavily discounted gas sales across the former Soviet space, not only to Ukraine and other net importers (mainly Belarus), but also in the Russian domestic market. Gazprom managers had lobbied government on this issue since the early 2000s, in the face of political pressure against removing discounts, in Russia and other former Soviet countries. This comes both from industrial lobbies, for which cheap energy is an important subsidy, and from politicians who fear that rapid changes might trigger unrest, because of the widespread perception that cheap gas, along with cheap housing, electricity and other services, is a social benefit.

In the mid 2000s, as European gas prices (which in the long-term contracts that dominate the market are linked to the prices of oil products, and thereby to oil) rose rapidly, the yawning differential between European netback levels and Ukrainian import prices was treated by market-minded Gazprom managers as an implicit loss. By the mid 2000s, political leaders in both Russia and Ukraine were acknowledging the principle that former Soviet importers should pay European netback prices, i.e. prices equal to the levels in the European market, minus additional transport costs. In November 2006, the Russian government adopted the same principle for the Russian domestic market, and set out a timetable for its implementation by 2011. The "gas wars" were, in the first place, a dispute about how, when and at whose expense the differential between Ukrainian import prices and "European netback" levels would be closed. Table 2 shows how, as European prices galloped up, and political haggling continued to affect the bargaining process, the differential fell below the import price, but was by 2008 wider than ever.

Table 2. Illustrative European border prices, netback and Ukrainian differential ¹¹

Gas prices, \$/ thousand cubic metres (mcm)	2004	2005	2006	2007	2008
European import price	143	189	247	254	368
Netback to Ukraine	116	158	210	216	327
Ukrainian import price	50	50-80	95	130	179
Differential	66	78-108	115	86	148

The “gas wars” were not of course a price dispute alone. A second cause was political, and arose from the Orange revolution of December 2004. Prior to it, the political leadership in Moscow – which saw President Leonid Kuchma of Ukraine as an ally, albeit a difficult one at times – was unwilling to turn its perennial gas dispute with Kiev into a confrontation. Afterwards, Moscow’s attitude shifted. Firstly, the street demonstrations unnerved many in the Russian political elite, who feared social unrest. Secondly, Moscow was displeased by the accession to the presidency of Viktor Yushchenko, who stood for distancing Ukraine from Russia and seeking closer ties with NATO and the EU. In February 2005 Yushchenko appointed as his first prime minister Yulia Timoshenko, a multimillionaire gas trader and former energy minister, who made no secret of her determination to disrupt the gas import scheme devised by Gazprom and Kuchma’s energy officials. At this point Moscow’s political objectives, of putting Yushchenko and Timoshenko on the back foot, fell in line with Gazprom’s commercial objective, of recouping the implied losses from CIS sales.

One way of measuring the importance of the political factor is to compare the implementation of the European netback principle in Ukraine and Belarus, which had its own “gas wars” with Russia in 2004 and 2007. In 2007 Russia conceded to Belarus a longer timetable for implementation, largely in return for the sale to Gazprom of a 50% stake in the Belarussian transport system. But Belarussian import prices have been consistently lower even than those implied by this timetable. In 2009, when both Ukraine and Belarus were timetabled to pay 80% of European netback, Belarus had in round numbers an additional discount of \$40-50/mcm (thousand cubic metres).¹²

¹¹ While Ukrainian import prices have been made public by Gazprom and Naftogaz Ukrainy, neither European border prices nor transit costs are made public; these are estimates, rounded to the nearest dollar.

¹² For detailed explanation see Simon Pirani, *The Impact of the Economic Crisis on the CIS Gas Sector* (Oxford, OIES, 2009), pp. 21-23 and 39.

These two main causes of the “gas wars”, commercial and political, often became intertwined with a complex set of issues about arrangements for gas to be imported and transported, and the companies involved. In October 2001 Russia and Ukraine had signed an intergovernmental agreement on gas, the last of a series of such agreements made since the break-up of the USSR. This (i) formalised the gas-for-transit arrangement and the supply of the remainder of the gas Ukraine needed by Turkmenistan, and (ii) sought to overcome the perennial 1990s problems of theft and unauthorised resale of gas, by providing mechanisms for Ukraine to pay for extra gas taken from transit pipelines and to pay duty on re-exports. Under this arrangement, Gazprom continued effectively to sub-contract to Itera the job of buying Turkmen gas, transporting it to Ukraine (via Gazprom’s own pipelines) and selling it there. While in the 1990s this may have relieved Gazprom of the headache of collecting payment in Ukraine, in the 2000s, as economies, prices and payment levels all rose, it simply provided a handsome revenue stream to Itera – whose opaque ownership structure, unclear links with some Gazprom managers and success in asset-stripping gas production companies attracted criticism. Itera’s role in the Ukrainian gas trade was reduced from trader to shipper, and in 2003 it was replaced entirely by Eural Trans Gas (ETG), headed by Dmitry Firtash, who was later named as one of Ukraine’s richest billionaires. ETG’s ownership structure was as opaque as Itera’s, but it had the support of the new Gazprom management.¹³

In 2005, the year following the Orange revolution, Gazprom’s stance on import prices, and the import scheme, toughened. First, Gazprom, in line with its internal centralisation efforts, replaced ETG, to which it had no obvious ownership links, with Rosukrenergo, a Russo-Ukrainian joint venture of which it owned 50% and companies controlled by Firtash and another Ukrainian businessman owned 50%. Second, Gazprom elicited from Ukraine an agreement to buy Turkmen gas only via Gazprom’s export division, Gazprom Export, and not directly. By thus severing direct Turkmen-Ukrainian contractual relationships, Gazprom strengthened its control over the CIS’s largest-volume gas trading nexus and prevented Kiev and Ashgabat playing each other off against Moscow. Finally, Gazprom adopted a more aggressive stance in the annual negotiations on import prices, prior to contract expiry on 31 December. Gazprom representatives suggested that prices had to rise from \$50/mcm to \$160/mcm or further. But hours before the year end, Russia provoked a stand-off, insisting that its gas would be sold at no less than \$230/mcm. Reportedly, Putin personally intervened in the negotiations at this point.¹⁴

¹³ Pirani, *Ukraine’s Gas Sector*, p. 26 and pp. 31–34.

¹⁴ On Putin, see Valerii Paniushkin and Mikhail Zygar’, *Gazprom: Novoe russkoe oruzhie* (Moscow, Zakharov, 2008), pp. 160–62.

Negotiations broke down and a crisis erupted, during which pressure was reduced in the transit network for two days (1–3 January) and export volumes to Europe were delayed. It should be noted that, after price negotiations broke down, Russia stopped delivering gas destined for Ukrainian customers but continued to deliver volumes for transit to Europe. Ukraine diverted some of these volumes for its own use, causing shortfalls in deliveries of Russian gas to central European customers over several days. This demonstrated the real constraint on Russia when it came to ending discounted gas sales: Ukraine had shown that it was prepared to exploit Russia's dependence on it for transit services in order to slow down price increases. Ukraine appeared to be in breach of international treaty obligations (under the Energy Charter treaty, which it had ratified and Russia had not), but European politicians – perhaps still inclined to sympathise with Ukraine in the wake of the “Orange revolution” – largely ignored the complexity of the dispute's origins and blamed the supply problems on Russia.

The crisis was resolved, and pressure in pipelines restored, with a corporate agreement of 4 January 2006 between Gazprom, Naftogaz Ukrainy and Rosukrenergo, which amounted to an all-round improvement of the terms of trade for Russia and a strengthening of Firtash's position.¹⁵ The increase in Ukrainian import prices for 2006 was relatively modest: Ukraine paid \$95/mcm to Rosukrenergo, for a “cocktail” of gas almost entirely from central Asia. More significant were the changes in trading arrangements. The agreement marked the end of the gas-for-transit barter system, a welcome step. It confirmed Rosukrenergo, Gazprom's ally and part-subsiary, as the sole importer of gas to Ukraine, and gave it a base in the domestic market, through the trader Ukrgaz-Energo (a joint venture between Rosukrenergo and Naftogaz Ukrainy, effectively managed by the Firtash group), which became the wholesale seller to industrial customers in 2006 and to the whole Ukrainian market in 2007. And while fees paid to Ukraine for transiting Russian gas to Europe were raised by roughly 50%, the agreement provided for storage services to be sold to Rosukrenergo and Ukrgaz-Energo at bargain-basement rates, frozen for 30 years.

For the next two years, European gas prices rose relentlessly; the European netback level, to which everyone agreed import prices should be tied, followed. For many energy sector professionals, this underlined the urgency of demand reduction, primarily by energy saving. In the steel industry, which was riding on the crest of its own export boom and had cash to spare, Ukraine's first significant energy saving investments were made. A national strategy was lacking, though. And

¹⁵ The agreement was published by *Ukrainska Pravda* on 5 January 2006, at www2.pravda.com.ua/ru/news/2006/1/5/36448.htm. For commentary on the dispute and the agreement see Jonathan Stern, *The Russian-Ukrainian Gas Crisis of 2006* (OIES, 2006) and A. A. Konoplianiuk, “Rossiisko-ukrainskii gazovyi spor: razmyshleniia po itogam Soglasheniia ot 4 ianvaria 2006 g.”, *Neft', gaz i pravo* 3:2006, pp. 43–49 and 4:2006, pp. 37–47.

political attention was concentrated on the battle over trade flows, and specifically on efforts by Timoshenko, who had returned as prime minister in December 2007, to deprive Firtash, whose main allies at this stage were in Yanukovich's Party of Regions, of both the lucrative Turkmen shipping contract and the foothold he had via Ukgaz-Energo in the Ukrainian gas market. Firtash lost the battle – crucially, because Moscow soon indicated that he had served his purpose, and that Gazprom would sell gas directly to Naftogaz, instead of using Rosukrenergo as an intermediary. (There was a political corollary: during 2009 it became clear that Moscow would accept Timoshenko as president after the 2010 election at least as readily as it would Yanukovich.)

Commentary on Ukrainian politics tends to foreground the battle between Timoshenko and Firtash, and it has even been claimed that it was one of the main causes of the January 2009 gas dispute. However, although this antagonism – like all such shifting alliances among post-Soviet Ukraine's business groups – has been a significant influence on government in Kiev, it is best understood as a secondary element in the larger picture, of boom turning to slump and of the end of discounted gas sales and the economic consequences.

In 2008, negotiations over import prices dragged on, and were settled only after a brief reduction in import volumes by Gazprom on 3 March. An agreement between presidents Putin and Yushchenko provided for Rosukrenergo's trading role to be ended from 2009, and for Ukgaz-Energo to be abandoned straight away and a 100% Gazprom subsidiary (i.e. one in which Firtash had no stake) to be allowed a small share of the Ukrainian domestic market. In October 2008, the principle of direct Gazprom-Naftogaz sales, at prices linked to those in Europe, was reiterated at a meeting between now prime minister Putin and his opposite number, Timoshenko.¹⁶ As the economic crisis crashed down upon both Russian and Ukraine, the agreement to sideline Firtash held, but the move towards European netback broke down. Within three months, the partial thaw in relations gave way to the most serious “gas war” of all, in January 2009.

6. The economic crisis and the 2009 “gas war”

Whereas in 2006 the “gas war” was fought against a background of economic boom and rising oil prices, the clash in January 2009 came in the midst of an economic slump and plummeting oil prices. Negotiations on import prices in December 2008 were conducted under the shadow of the financial crisis that had erupted in September in the US. In Russia, the government had spent about

¹⁶ “One step forward, two steps back for Timoshenko”, *Gas Matters*, March 2008, p. 1; “Winners and losers in the March 2008 Russo-Ukrainian ‘gas war’”, *Gas Matters*, April 2008, p. 14

one-third of the \$597 billion foreign exchange reserves it held (including the oil windfall accumulated in 2002-07) when the crisis broke; GDP, which had been rising at 6-8% annually for six years, was heading into recession; and oil prices had fallen from their July peak of \$143/bbl to \$30-40/bbl, with drastic consequences for Russia's oil-dependent economy. Gazprom knew that in 2009 its income would be slashed, as both gas prices and sales volumes fell. At government level, the recession swept away any inclination there may have been to avoid confrontation with Ukraine over gas import prices. So when contract negotiations remained unresolved by 31 December, and Ukraine failed to make full payment of penalties for previous late payment, Moscow chose to cut off Ukrainian imports rather than negotiate further.

The impact of the crisis on Ukraine was greater still. GDP would fall by an estimated 15% in 2009, a significantly deeper slump than Russia's.¹⁷ Much of the steel and chemical industries – on whose export revenues Ukraine is heavily dependent – had been stood down. The IMF had identified Ukraine as one of the eastern European states most at risk of banking sector collapse and sovereign default, and in October 2008 provided it with a \$16.4 billion emergency loan programme, one of the largest such arrangements. The industrial collapse meant that gas demand had fallen steeply from industry, i.e. from the best-paying customers. To Ukraine's political leaders, the prospect of a stand-off with Moscow, during which customers would be supplied from gas in storage, probably looked more appealing than a climbdown on price.

The gas dispute in January was the most serious ever, with supply to 16 EU member states and Moldova being reduced or stopped completely. Several Balkan countries suffered severe fuel shortages. The course of events, briefly, was as follows.¹⁸ From 1 January Russia delivered gas for transport to Europe, but none for Ukraine's own consumption. Ukraine transported these volumes for Europe, but a dispute arose over the fuel gas for the pipeline system. Ukraine argued that its obligation to supply this was void in the absence of a contract, and took it from the transit gas; Russia denounced this as theft and withheld corresponding volumes. On 6 January Russia reduced supplies further, without explanation. On 7 January, deliveries of gas for Europe stopped entirely, with both sides blaming each other. Ukrainian engineers then switched the pipeline system to work

¹⁷ For Ukraine, the World Bank, working with the government, recorded 2.1% growth in 2008 and forecast – 15% growth for 2009. The Russian government's recent published estimates show GDP growth of 5.6% in 2008 and – 9.5% for 2009. The World Bank, *Ukraine Economic Update*, 15 October 2009; Ministry of economic development, *Prognoz sotsial'no-ekonomicheskogo razvitiia RF*, Moscow September 2009.

¹⁸ A detailed account is given in Simon Pirani, Jonathan Stern and Katja Yafimava, *The Russo-Ukrainian gas dispute of January 2009: a comprehensive assessment* (Oxford, OIES, 2009). The dispute's implications are analysed e.g. in Kirsten Westphal, *Russian Gas, Ukrainian Pipelines and European Supply Security* (SWP Research paper, 2009); the Brussels view is given in European Commission, *Commission Staff Working Document: The January 2009 Gas Supply Disruption to the EU: an assessment* (SEC (2009) 977 final).

in reverse, to transport gas stored mainly in western Ukraine to the largest population centres, in the east and south. For 12 days neither side worked pro-actively to solve the dispute, and protests from Europe grew louder. On 19 January, negotiations between Putin and Timoshenko were followed by the signing of ten-year supply and transit contracts between Gazprom and Naftogaz.¹⁹

These contracts amounted to another step away from post-Soviet political haggling, towards market-based commercial relationships. Crucially, Ukrainian import prices would no longer be set by annual negotiations, but instead were linked to the price of oil products in a manner similar to European contracts. The transit fees paid by Russia to Ukraine would also be linked to those in Europe. The conclusion of the direct contracts between Gazprom and Naftogaz confirmed Rosukrenergo's exit from the Ukrainian market, and thus ended the involvement of intermediary traders that had complicated Russo-Ukrainian relations since the mid 1990s. (Legal disputes ensued over 11 bcm of gas stored in Ukraine by Rosukrenergo; essentially, Gazprom forwarded \$1.6 billion of transit fee income to Naftogaz, to make a compulsory purchase of this gas. During 2009 Gazprom also dislodged Rosukrenergo from its lucrative sales of central Asian gas to central European customers.)

The contracts were disadvantageous to Ukraine. President Yushchenko urged they be renegotiated in the week they were signed, a call repeated subsequently by other politicians including Yanukovich – and the issue could yet be the cause of future conflict. Firstly, the “base price” assumed for European price levels, on the basis of which import prices are calculated, appears to be at least 10% higher than it should be. Secondly, the import contract includes not only take-or-pay clauses similar to those used in Europe, but further onerous penalties on Ukraine for failing to offtake agreed volumes in any given month; the transit contract, by contrast, provides for negligible penalties if transit volumes are reduced.²⁰ During 2009, Ukraine's imports were the lowest by volume in post-Soviet times. Ukraine could thus have been liable for several billion dollars' worth of penalties, but in November 2009, in a rare instance of harmonious cooperation, Gazprom agreed both to amend downwards the import volumes for 2009 and 2010 and to waive these penalties. The issue of possible renegotiation of the contracts was postponed until after Ukraine's presidential election.

¹⁹ Leaked, but undisputed, versions of the contracts were published by Ukrainska Pravda, at <http://www.pravda.com.ua/rus/articles/4b1ab16443461/> (import contract) and <http://www.pravda.com.ua/ru/news/2009/1/22/87178.htm> (transit contract). Accessed 12 January 2010.

²⁰ For details, see Pirani, *The Impact of the Economic Crisis*, pp. 22-24 and 39; and www.eegas.com

7. A turning-point for European demand and Russian supply

The impact of the recession on Ukraine's gas sector needs to be placed in the context of the larger changes it has caused, and will cause, both for the European gas market and for Russia as Europe's, and the world's, largest gas producer. In the EU-27, as a result economic slowdown, and lower industrial production particularly, gas demand fell year-on-year during the first half of 2009 by 7.6%, and during the whole year by an estimated 6%. This lower demand impacted imported supplies harder than EU production, and Russian imports harder than those from Norway, Algeria and elsewhere: Russian imports to Europe were down in the first half of 2009 by 32% in volume terms, and recovered, but only partly, in the second half. The slump in Russian gas exports was more than matched by the collapse of demand in Russia and other CIS markets, and total Russian gas production is estimated to have fallen from 664 bcm in 2008 to 583.6 bcm in 2009 (a fall of 12.5%).²¹

Serious as is this unprecedented decline in European sales is for Russia, potentially still more serious are the uncertainties surrounding long-term European demand. First, research suggests that European demand may not return to its 2008 level until 2015 or even later.²² Second, it appears likely that liquefied natural gas (LNG) imports into Europe could increase rapidly in the next few years, as a result of LNG being pushed out of the north American market by the unconventional gas boom and by the output increase due in Qatar. In the longer term, after 2020, possible unconventional gas development in Europe itself could prove to be a further competing source of supply. While Russia's position as the largest importer in to Europe is unchallenged, and there is no significant threat to its position in its traditional markets, the balance of the European market will, for at least the next few years, be tilted fundamentally in favour of buyers.

The world in which Gazprom is operating has thus changed considerably, with respect both to investment plans and revenue streams. The assumption generally held in the industry, that European demand for Russian gas would continue to grow, and that the volume of Gazprom's long-term contract sales would grow with it, has been overturned. In 2009 the fall in demand combined with attempts by customers to substitute Russian gas for cheaper purchases elsewhere, and requests that the minimum volumes stipulated in contracts be renegotiated. In response to the crisis, Gazprom

²¹ Eurostat, *Euro indicators news release 145/2009*, October 2009; Ministerstvo ekonomicheskogo razvitiia Rossiiskoi federatsii, *Ob itogakh sotsial'no-ekonomicheskogo razvitiia Rossiiskoi federatsii v 2009 godu* (Moscow, February 2010).

²² Anouk Honore, *European Gas Demand, Supply and Pricing: Cycles, Seasons and the Impact of LNG Price Arbitrage* (Oxford, Oxford University Press, forthcoming 2010).

reduced its investment budget for 2009-10 by about a quarter, in line with the worldwide oil and gas industry average. It postponed by a year to 2012 the commissioning of the Yamal gas field, which will over the next two or three decades replace west Siberia as its main centre of production.

A long-term levelling-off or decline in demand for Russian gas would naturally lead to further dilemmas about the pace of future investment. Long-term oversupply of the European market would place a question mark over sales volumes and prices, and therefore over Gazprom's revenues. An important aspect of these changes concerns price structure. Currently, prices in long-term gas sales contracts are determined by a link to oil prices, as mentioned, rather than by gas supply and demand. But there is a body of opinion that believes this long-established pricing mechanism could itself be reformed or replaced if the market imbalance was significant enough.²³

From Ukraine's standpoint, any such future changes in price structure and prices might be reflected either in lower European netback levels, or in possibilities to renegotiate import contract terms. But for the moment such possibilities are overshadowed by the much greater and more immediate problem of how Ukraine will pay for its gas imports now that the transition to European netback has been completed.

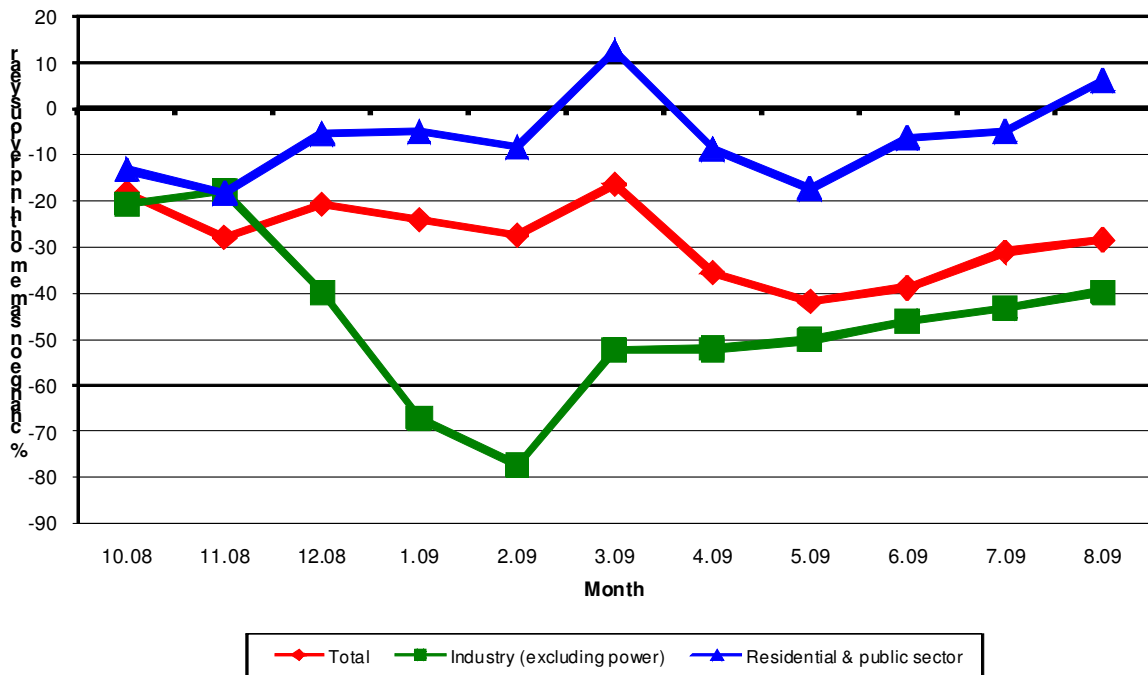
8. Ukraine in 2009-2010

In 2009, a number of problems combined to produce a serious crisis around Ukraine's payments for gas imports. Firstly, under the January agreement, import prices increased sharply in line with the drive to European netback, to 80% of a nominal European netback level. (They rose to 100% of this level on 1 January 2010.) Secondly, due to the recession, gas demand plummeted among industrial customers (who pay the import price plus a small premium), while demand fell only slightly from district heating companies (who pay less than half the import price, and have a high level of non-payment), residential customers (who pay even less, although they are supplied with Ukrainian-produced gas) and from Naftogaz Ukrainy for technical use. This made unsustainable the financial model on which Naftogaz has been organised, under which revenue from industry and from transit fees is used to cross-subsidise residential users and district heating, and to make a considerable contribution to the state budget via taxes.

²³ Many of these issues are dealt with in OIES papers: Jonathan Stern, *Future Gas Production in Russia: is the concern about lack of investment justified?* (Oxford, OIES, 2009) and Jonathan Stern, *Continental European Long Term Gas Contracts: is a shift away from oil-linked pricing inevitable?* (Oxford, OIES, 2009).

In 2009, over the year as a whole, gas demand fell compared to 2008 by 21.8% in aggregate. While demand plummeted by 41.9% in industry (excluding power), it only fell by 2.3% among residential and district heating customers. Monthly consumption figures, as compared to the same month in the previous year, are presented in Figure 1. They highlight the close correlation between the industrial gas demand slump and the world economic crisis that followed the financial crisis of September-October 2008.

Figure 1. Ukraine gas consumption, year-on-year changes



The underlying reasons for Naftogaz’s plight are the high energy intensity of Ukraine’s industry and its urban infrastructure, and the failure of successive governments to implement energy-saving, price reform and other policies that might have reduced dependence on imports. But during 2009 few resources were devoted to these fundamental problems. The government and all Ukrainian politicians were focused on the presidential election rather than on long-term issues. The IMF was concerned above all that Naftogaz should not help to drag the Ukrainian state into a financial crisis. The Fund formally acknowledged that it would treat Naftogaz’s debts as part of the broader fiscal problem: it included the company’s operational deficit for 2009, which it estimated at 2.7% of GDP (nearly \$3 billion), as part of Ukraine’s fiscal deficit.²⁴ The EU had also become involved, but primarily because of its concern that a Ukrainian failure to pay for imports could result in new supply disruptions.

²⁴ IMF, *Ukraine: Second Review Under the Stand-By Arrangement*, September 2009

The government presented plans for domestic gas market reform, including price reform, both to the EU, at a Brussels conference to discuss investment in the pipeline system, and to the IMF in a letter of intent under the loan programme. But, as mentioned above, these plans were in 2009 not implemented. *Note: some steps towards implementation (adoption of gas sector reform law, first tariff increase for households and district heating companies) were taken in mid 2010.* Rather, the attention of international institutions and the government focused on how to ensure payment was made to Russia for gas imports by the 7th of each month, under the contracts signed in January. On several occasions, the national bank transferred funds to Naftogaz from Ukraine's reserves by various means, including the purchase of government debt and loans to state banks for on-lending. This procedure, too, is clearly unsustainable, but all parties persisted with it in the hope that, after the presidential election, a new and more stable political set-up will allow longer-term problems to be addressed. Time will tell whether such hopes can be justified. In any case, the problem of payments for imported gas can only intensify, as the "base price" in the contract moves from 80% to 100% of the European netback level mentioned above. The outlines of the payment problem are shown in Table 3.

Table 3. The cost of Ukraine's gas imports

	Volume of gas imported	Price per mcm	Import bill
2009, 1st nine months*	16.65 Bcm	\$360 (Q1) \$270.95 (Q2) \$198 (Q3)	\$4.12 billion
2009 (estimate)	28.5 Bcm	\$231.12 (average)	\$6.59 billion
2010 (projection)	32.5 Bcm	\$290-300 (average)**	\$9.42-9.75 billion

* Source: energy ministry statistics, Naftogaz and government statements

** This assumes an average oil price of \$70/bbl and an average European gas price of around \$320/mcm

Note. The problem of payments for imports was addressed in 2010 both by the Russian government and the IMF, who have both effectively funded discounts for Naftogaz. See below, Note:

Developments in 2010.

The other change in 2010 is that construction of the Nord Stream pipeline has started. The project has now received all the necessary regulatory permissions, and a financing package has been put together with especially strong support from the German government. Such an expensive project to bring extra gas to Europe can hardly be justified on commercial grounds, since the fall in demand

means that existing infrastructure can bring more gas to Europe than is needed, at least for the next few years. Clearly, Russia, with the support of Germany, Italy and its European partners, are pressing ahead with the project in part to reduce their dependence on Ukraine and Belarus for transit. Completion of the first string of the pipeline, with a capacity of 27 bcm/year, is now likely in 2011 or 2012. A second string with similar capacity is planned to follow the first.

There is no serious prospect that gas currently transported via Ukraine to central and southern European destinations will be diverted to this pipeline: that would be needlessly costly. Rather, the issue for Ukraine is that it will lose bargaining power: Gazprom and its European customers know that, with the help of Nord Stream and extra interconnections and storage being made ready in central Europe, a suspension of transit through Ukraine could be mitigated more easily and for a longer period. Further in the future, after 2015, and dependent on the investment priorities of Gazprom and the European energy companies, the South Stream pipeline could be built, which *would* be a direct alternative to Ukrainian transit. In short, while “gas wars” are possible during the next two years, after that the effect on Gazprom of Ukrainian threats to disrupt European transit will be diminished, and could eventually be eliminated.

Note: Developments in 2010

Political tensions between Moscow and Kiev were reduced following the election of Viktor Yanukovich as president of Ukraine in February 2010, and his success in forming a government dominated by his supporters shortly afterwards. Under Yushchenko, Gazprom’s determination to take a hard line with Naftogaz over import prices had been reinforced by the Russian government’s intense hostility towards Yushchenko’s pro-NATO foreign policy; when Yanukovich came in, with gas import prices at their height, the two sides reopened negotiations on import terms. Gazprom, having brought Ukrainian prices up to a European netback level, was loathe to back away from that principle. Instead, the Russian government agreed to finance a 30% discount on most (but not all) gas exports to Ukraine, by waiving the 30% export duty normally paid. Depending on European gas prices, this arrangement could amount to a subsidy over ten years of up to \$40 billion. In return, Ukraine agreed to extend the lease on the Sevastopol base used by Russia’s Black Sea fleet from 2017 to 2042, with a further five-year option.²⁵

²⁵ For a detailed assessment by the author and his colleagues, see Simon Pirani, Jonathan Stern and Katja Yafimava, *The April 2010 Russo-Ukrainian gas agreement and its implications for Europe* (OIES, June 2010)

This agreement certainly reduced the prospect of a new “gas war” in the immediate future. But it left many questions unresolved. First, there were imbalances in the contracts signed in 2009 that were left unaddressed. Second, the legal status of the 11 bcm of gas sequestered from Rosukrenergo by Ukrainian officials during the January 2009 dispute was not resolved, and while the arbitration court in Stockholm ruled in Rosukrenergo’s favour, Dmitry Firtash’s business group is involved in a long-running and opaque negotiation with the government about the terms on which this dispute will be settled. Finally, the possibility of wider cooperation between Gazprom and Naftogaz has been mooted (although suggestions by Putin and others of a merger are more likely to be negotiating positions than a guide to what will happen next).

Even with this discount, the IMF expects Naftogaz to run an operating deficit in 2010 of 1% of GDP (the best part of a billion dollars). This was one element of Ukraine’s continuing fiscal crisis that the Fund addressed with a second, \$15 billion, loan programme, approved by the IMF board in July 2010. And part of the conditions agreed on between the IMF and Ukraine for the loans are a series of reforms in the gas sector, including legislation (now adopted) bringing Ukraine largely in line with EU market rules, and a series of price increases (the first of which was implemented in August) to bring gas tariffs for households and district heating companies, as well as those for industry, up to the levels of import prices. The intention is that such changes, together with energy saving and energy efficiency measures, could reduce consumption and shake up the economics of Ukraine’s gas sector in such a way as its difficulties with paying import bills would be drastically reduced. Over the next few years, the success or otherwise of this strategy will unfold.

Outlook and conclusions

Conclusions will be presented here about the three main aspects of Ukraine’s gas business: supply, transit and demand.

Ukraine’s gas *supply* will continue to be dominated by imports from and through Russia for the foreseeable future. The prospects of Ukraine accessing alternative sources of imports are extremely limited. The central Asian countries from which Ukraine has previously imported gas could and can only do so using infrastructure that crosses Russia. Gazprom, having severed Ukraine’s direct commercial relationship with Turkmenistan in 2005, is unlikely to tolerate the revival of such arrangements. Another possibility, but not a likely one for several more years, is that a “fourth corridor” will be opened up to bring central Asian gas to Europe via new pipelines that avoid Russia, e.g. the Nabucco or White Stream projects. So far, political agreement has not been reached,

and money not found, for such projects. *If* that changes, and *if* investment were made in additional infrastructure, some gas from such a corridor could be delivered to Ukraine, but the emphasis must be on the large number of doubts. Ukrainian politicians and Naftogaz routinely voice hopes of sourcing alternative imports either via a future LNG import terminal and/or from producing countries with which Naftogaz signs memoranda of understanding. But it is not clear that the billions of dollars of investment capital needed for such ventures would not be better spent on Ukraine's own domestic gas fields.

Raising Ukraine's domestic production, however gently, seems to be a more realistic prospect than any of the alternative investment scenarios. The rate at which this can be done depends entirely on the availability of investment funds, either from state-owned Naftogaz and its affiliates, or by international companies, who will likely await a more stable and predictable legal framework.

In the best of all possible worlds, Ukraine will only raise production by a few bcm/year in the next few years. Assuming that the fall in industrial demand caused by the recession stays at the current level or begins to reverse, and that energy saving measures take effect only slowly, Ukraine's great problem will be to pay for imports.

Gas sales to Ukraine continue to be discounted, despite the drive by Gazprom to achieve European netback prices. But the burden of the discounts has been shifted from Gazprom; now it is being funded by the Russian government (at roughly \$3 billion annually in exchange for the Black Sea base lease extension) and the IMF (up to \$3 billion in 2009, up to \$1 billion in 2010, projected to fall to zero in 2011). Progress continues, slowly, towards European netback prices for all FSU importers – offset somewhat by the downward pressure on prices, and the related shift in price structures, in the European gas market.

The improvement in Russo-Ukrainian political relations following the presidential election reduces the immediate prospects of a new “gas war”. But the current arrangements, involving the large discounts mentioned, reflect the fact that the underlying problems – excessive consumption, pricing mismatches in the Ukrainian domestic market, etc – remain unresolved.

Ukraine's *transit* of Russian gas to Europe faces the prospect of decline. Firstly, the fall in European demand for gas means that transit volumes may take several years to return to the levels of 2006-08. Secondly, while Ukraine's transit business faces no direct threat from the Nord Stream pipeline, the completion even of one string will increase Russia's ability to reroute gas during an

emergency. This, together with the measures taken in Europe to mitigate the impact of a future Russo-Ukrainian dispute, would significantly lessen the effect on Russia of any future shutdown of Ukrainian transit routes. Within three years Ukraine is likely to be largely deprived of the biggest bargaining chip it used in all previous gas disputes with Russia, the threat of disrupting supplies to Europe.

It has been argued above that Ukraine's excessive *demand* for gas lies at the root of its export dependence and related problems. It is a legacy of gas-intensive industrial and urban development in Soviet times, when supply was plentiful and cheap were plentiful, that Ukraine has so far been unable to overcome. The energy strategy adopted in 2006 focuses on reducing gas consumption both by energy saving and by switching to coal and nuclear fuels. Little has been done to implement these policies, for both economic and political reasons. Even before the 2008-09 recession, Ukraine was constrained by the fragility of its economic recovery; the impact of the crisis in the last year has set it back further. Politically, government has been too weak, and too subject to the pressure of immediate events, to proceed effectively. In the short term, measures to tackle some of the more wasteful uses of gas may well be taken under the pressure of rising prices. In the longer term, substantial energy saving is possible only in the context of expensive large-scale restructuring both in industry and urban infrastructure. Only once this gets underway will Ukraine be able to make more rational use of gas and escape from excessive dependence on imports.

(ends)