

## Oxford Energy Comment

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# The Transition to Hub-Based Pricing in Continental Europe: A Response to Sergei Komlev of Gazprom Export

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by Jonathan Stern and Howard Rogers

### Introduction

We have been moved to write this comment following publication of a paper by Sergei Komlev, from the Contract Structuring and Pricing Directorate of Gazprom Export, which challenged our research on European gas pricing.<sup>1</sup> The Komlev paper is dated January 11, 2013 and was circulated by Gazprom Export's public relations company on January 17.<sup>2</sup> It was available on the front page of the Gazprom Export website for at least two weeks, and was discussed in the trade press.<sup>3</sup> By February 4, 2013 the paper had disappeared from the website, and we understand that the author is revising the paper in the light of comments which he has received. In that spirit, and despite the fact that the paper is no longer publicly available, we believe it may be helpful to add our comments to those of others.

In his paper Komlev suggested:

- that the arguments in our March 2011 paper<sup>4</sup> on the transition to hub-based pricing in European gas markets are 'not convincing',<sup>5</sup>
- that in our book on *The Pricing of Internationally Traded Gas*,<sup>6</sup> we have ignored: '...the multiple credible arguments that were brought into the public domain in support of oil indexation in long-term supply contracts ... [and refused] ... to engage constructively with those who offer opposing viewpoints.'<sup>7</sup>

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<sup>1</sup> Sergey Komlev, *Pricing the 'Invisible' Commodity*, Discussion Paper, Gazprom Export, 11 January 2013 [http://www.gazpromexport.ru/files/Gas\\_Pricing\\_Discussion\\_Paper\\_Komlev\\_GPE\\_Jan\\_11\\_2013\\_FINAL127.pdf](http://www.gazpromexport.ru/files/Gas_Pricing_Discussion_Paper_Komlev_GPE_Jan_11_2013_FINAL127.pdf)

<sup>2</sup> Portland Communications

<sup>3</sup> 'Gazprom speaks out in favour of oil indexation', *Platts International Gas Report*, January 28, 2013, pp.10-11.

<sup>4</sup> Stern and Rogers (2011). *The Transition to Hub-Based Gas Pricing in Continental Europe*, OIES, Jonathan Stern and Howard Rogers, March 2011, <http://www.oxfordenergy.org/2011/03/the-transition-to-hub-based-gas-pricing-in-continental-europe/>

<sup>5</sup> Komlev p.4.

<sup>6</sup> Jonathan Stern (2012). *The Pricing of Internationally Traded Gas*, ed. Jonathan Stern, OIES/OUP, 2012. <http://www.oxfordenergy.org/shop/the-pricing-of-internationally-traded-gas-ed-jonathan-p-stern/>



In this brief comment we argue that:

- not only are the explanations which we have provided for the transition to hub-based pricing in our view convincing, but market developments since 2007, when we first published research on this subject, provide ample evidence that Continental European gas prices are moving inexorably in this direction;
- Komlev's contention that 'hybrid pricing'<sup>8</sup> is the appropriate model for European gas markets in fact confirms his acceptance of the importance of hub-based pricing, even though he refuses to recognize that hybrid pricing is only a stage in the transition to full market-based pricing;
- not only do we believe we engaged constructively with arguments in support of oil indexation, but that in his paper he acknowledged that we did so.

Before entering into these arguments, we vigorously object to Komlev's reference to us as 'consultants'.<sup>9</sup> We are not consultants, we are independent academic researchers. We have no commercial position to protect and no clients whose views we need to take into account. What we say, we say because we believe the views which we advance are supported by our research findings. Our work is transparent and publicly available – either free to download, or in bookshops. We believe that these attributes set our research apart from the majority of other commentary on this subject.

### **Theoretical and Empirical Support for Market-Based Gas Pricing**

The fundamental theoretical proposition which emerges from Komlev's argument is that he does not believe that gas prices should be formed by the interplay of supply and demand for gas. In a footnote which we believe refers to our work, he says:

‘...such analysts typically only understand market activity as it relates to textbook theory of supply and demand economics. All market activity, in their view, must be a reflection of these supply and demand forces’.<sup>10</sup>

By contrast, he suggests that his paper serves as ‘a case study of the systemic failure of the natural gas pricing model based on supply and demand.’

The argument that natural gas prices should not reflect supply and demand for natural gas, which requires Komlev to claim that natural gas is a unique commodity which should not be expected to conform to the rules of any other commodity (or indeed any other market) is hugely problematic both theoretically and empirically. To argue that a market for a given product is imperfect, with prices not necessarily representative of supply and demand, may be reasonable. But to argue that pricing based on supply and demand is a fundamentally flawed

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<sup>7</sup> Komlev, p.4.

<sup>8</sup> Hybrid pricing refers to the situation where long-term oil indexed contracts co-exist with traded gas hubs; the latter performing a role of short-term balancing.

<sup>9</sup> Komlev, p.44,

<sup>10</sup> Komlev, note 3, p.4.



concept, and that the gas price should continue to be based on that of a completely different commodity, is an untenable analytical position. Our recent book draws from academic literature to provide an analytical account of how international gas pricing has evolved and may evolve over the next decade.<sup>11</sup>

Komlev's paper states that:

‘...what is lacking today is a comprehensive study of global gas pricing that presents a broader view of the market unencumbered by the self-imposed theoretical strictures of mainstream industry analysts’.

We suggest that our book<sup>12</sup> – a work of more than 500 pages covering gas pricing across the majority of gas regions of the world – is a substantial attempt to provide a comprehensive theoretical and empirical study of gas pricing; we know of no other publicly available research with a similar breadth and depth of analysis.

### **Inter-Fuel Substitution and Contractual Linkage Between Oil and Gas**

The original logic of gas pricing in Europe relates to the fact that when the fuel was introduced it was (largely) replacing oil products and consumers could switch between the two fuels. Komlev acknowledges that:<sup>13</sup>

‘It is true that day to day demand side substitution has not been the case in Europe for more than 20 years. However...we believe that pricing based on substitution value does not require a large number of actual transactions’.

But despite strenuous attempts to maintain that gas prices should still be linked to oil, his agreement with our empirical analysis, first published in 2007, that there is no longer any market connection between the fuels, renders Komlev's argument unconvincing.<sup>14</sup> He makes great efforts to claim that future use of gas in the transportation sector will restore the link between oil and gas pricing, but fails to say that gas penetration in the transportation sector is currently minimal. Until genuine competition and substitution between oil products and gas is re-established, there is no case for formal contractual linkage between oil and gas prices.

Komlev fundamentally confuses *the relationship between oil and gas price levels* with the case for *maintaining formal contractual linkage to oil product prices* in long-term gas contracts. He spends a great many pages demonstrating the continuing relationship between oil-linked and hub-based gas prices – but this is not surprising given that his company (and

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<sup>11</sup> Christopher Allsopp and Jonathan Stern, *The Future of Gas: what are the analytical issues related to pricing?* In Stern 2012.

<sup>12</sup> Stern 2012.

<sup>13</sup> Komlev, p.33.

<sup>14</sup> Jonathan Stern, *Is there a rationale for the continuing link to oil product prices in Continental European long term gas contracts?* OIES, 2007, <http://www.oxfordenergy.org/2007/04/is-there-a-rationale-for-the-continuing-link-to-oil-product-prices-in-continental-european-long-term-gas-contracts/>



others) continues to maintain that linkage in its long-term contracts. What he does not demonstrate is that formal contractual linkage of gas prices to oil prices is either logical or market-based. Our research does not argue that oil prices are, or in the future will be, irrelevant to gas prices; on the contrary we argue that we do not know – and we have seen no research that demonstrates – how great that relevance will be.

Our research suggests that there could be periods of time – which have occurred in liberalized markets – when hub-based gas prices could be above their oil-linked counterparts. But a telling part of Komlev’s argument is that he does not believe that hub-based prices will rise above oil-linked levels on any sustained basis.<sup>15</sup> We suggest Komlev should simply acknowledge that he wants to retain traditional long-term oil-indexed contracts because they provide the highest price, and therefore the highest return, for gas producers and exporters. This is an entirely logical commercial position, but not one which can be defended in analytical or theoretical terms.

### **The ‘Fairness’ of Gas Pricing**

In a long passage about a ‘fair’ price of gas, Komlev states that supply/demand pricing is ‘unfair’ because it produces a price which is less than that which would have been received under oil indexation. He produces an analysis of other commodities to suggest that increases of oil-indexed gas prices in the post-2008 period should not be seen as unreasonable. He further argues that supply/demand gas prices are ‘dysfunctional’ because gas will never command the same return for producers as oil. But the gas industry has always known that the return on gas developments will be different to, and often lower than, that for oil because of the physical characteristics of the fuel and the markets into which it is sold. This is not a question of ‘fairness’ but of commercial reality.

The heart of Komlev’s argument is that hub-based pricing will lead to lower returns and have a negative impact on producers:

‘...a pricing mechanism based on supply and demand does not meet the criteria of price fairness because it is not supportive of investment in the industry. This state of affairs could be resolved by hub price adjustments that would cover production, liquefaction and transportation costs for new projects. However this is not the case in the gas industry where markets do not perform their balancing functions properly and, in some cases, are simply dysfunctional ... The premise that gas prices should be dictated by spot markets does not give any reassurance to gas producers’.<sup>16</sup>

It is absolutely true that producers need to decide whether the price they will receive for producing and exporting their commodity will result in a profit which they believe reflects

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<sup>15</sup> Komlev p.51.

<sup>16</sup> Komlev p.19 and 20.



the value of their resource. What is not true is that producers should be guaranteed a return on their investment; in a market nobody is guaranteed a profit on their investment, they need to make judgements and take risks. If gas producers judge that the price they expect to receive for their product will be insufficient to provide adequate returns, then they should not invest in new gas production and transportation. This is their right, and depends on their view of future market circumstances. But Komlev does not wish to accept that business investment decisions implicitly involve considerations of risk versus reward. He believes that ‘...gas producers need protection now, more than ever, in order to maintain their investment programs. This protection can only come from oil-indexation.’<sup>17</sup>

The concept of ‘fairness’ is not commonly used in economic literature, but if it is to be used then it must apply to both sides of a bargain or contract. The current position can be summarized thus: all midstream market players are saying that they cannot accept that gas prices should remain contractually linked to oil (and are losing money from being required to purchase gas on these terms); spot prices at which those players have to sell to their customers have been 20–30 per cent lower than oil-indexed prices; and temperature-corrected gas demand has been falling for four years. In these circumstances, does it really make any sense to claim that oil-linked prices are fair? What Komlev is asking for is ‘one-sided fairness’ – applying only to producers.

### **The Inevitability of Hub-Based Pricing**

Komlev explicitly acknowledges that we have addressed if not all, then at least the most important, of his concerns in relation to the transition to hub-based pricing:

‘Perhaps what is most astonishing is that those who advocate transitioning to hub-based pricing understand the negative consequences of this move, but they advocate it anyway. Stern and Rogers...agree that a change in pricing principles will.’<sup>18</sup>

- cause major problems for existing long-term contracts, some of which may not survive;
- disproportionately favour the end-user by allowing buyers to schedule nominations in a way that will depress hub prices;<sup>19</sup> or ...
- grant suppliers the ability to accumulate significant market power and control European hub prices through supply management.’<sup>20</sup>

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<sup>17</sup> Komlev p.33.

<sup>18</sup> Komlev pp.7–8.

<sup>19</sup> Our line of reasoning here has been as follows: if long-term contract price formation mechanisms became hub-based, then the seller might have concerns that high nominations from the buyer would have the result of lowering hub prices, due to higher physical supply flows.

<sup>20</sup> In order to avoid disproportionately favouring the end user the seller could, not unreasonably, insist that an agreed portion of contract nominations be fulfilled by gas purchased on the spot market and re-delivered to the buyer. This – and the ability of the seller to engage in direct physical sales of gas into the spot market –



What Komlev does not appear to understand is that we are not *advocating* a move to hub-based pricing. What we have consistently said in research published regularly since 2007, is that such a move is *inevitable* because of market liberalization, the coming of competition, and consumer choice. As Komlev acknowledges, we have never sought to minimize the problems this may cause – indeed in other work we have included price volatility as another potential problem.<sup>21</sup> The inevitability of the transition is illustrated by the estimate that in 2012 around 45 per cent of gas sold in Europe was based on hub prices and in 2013 this process will go beyond the ‘tipping point’: more than half of Europe’s gas will be priced in relation to hub and exchange prices.<sup>22</sup>

Another major difference between our views is that Komlev,

‘...cannot agree with the assertion...that a malfunctioning hub-based pricing model is better than the existing and proven mechanism of oil-indexation.’

Indeed, he states:

‘The ideologically driven policy of opposing long-term oil-indexed gas contracts may be motivated by the best of intentions, but ... it will have a disastrous effect on European gas supply, energy security and price stability.’<sup>23</sup>

By contrast, we suggest first, that the hub-based pricing system is not ‘malfunctioning’ it is still evolving; like any evolving system has limitations and will continue to improve over the next decade. Our research draws a parallel with the history of the Brent oil market which also encountered serious problems before it became established as a global oil price marker.<sup>24</sup>

Secondly, we believe that our views are not ideologically driven – unless arguing that the price of a product should be derived from supply and demand for that product is regarded as an ‘ideological’ (rather than an analytical) position. Thirdly, we do not believe that moving to hub-based pricing will have a disastrous effect on European gas. Indeed, we believe that the damaging effects on European gas demand, which we see in the 2008–12 period, have been caused, at least in part, by maintaining gas prices at artificially high levels linked to oil.<sup>25</sup> Unless gas prices are rapidly adjusted to hub prices, European gas demand will continue to fall, with the effect that gas will become a ‘sunset industry’ in Europe.

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results in a seller supplying a significant portion of physical supply to the market, with the ability to adjust physical flows while meeting contractual nominations, inevitably resulting in a position of market power.

<sup>21</sup> Sofia Alterman, ‘Natural Gas Price Volatility in the UK and North America’, OIES: 2012, [www.oxfordenergy.org/2012/02/natural-gas-price-volatility-in-the-uk-and-north-america/](http://www.oxfordenergy.org/2012/02/natural-gas-price-volatility-in-the-uk-and-north-america/).

<sup>22</sup> Thierry Bros, ‘European gas: on the verge of being spot indexed’, *Oxford Energy Forum*, No 89, pp.3–4.

<sup>23</sup> Komlev p.8.

<sup>24</sup> Stern and Rogers 2011, p.21.

<sup>25</sup> We readily acknowledge that not all negative consequences on European gas demand during this period can be attributed to oil-indexed gas prices; subsidized renewable energy and cheap coal, as well as economic recession, have also contributed significantly to the reduction of gas demand in the power generation sector.



## Hybrid Pricing and Empirical Evidence

Komlev portrays our position on hybrid (i.e. the coexistence of oil-linked and hub-based) pricing as:

‘...simply another name to denote the existing two-tier pricing structure...[they] do not even consider the possibility that there might still exist interdependence between these two prices’.<sup>26</sup>

Rather, our argument is that hybrid pricing is simply a stage in the transition to hub-based pricing. He suggests that we fail to provide empirical evidence that hub prices are driven by their own fundamentals. In fact our work, and that of our colleagues Patrick Heather and Sofya Alterman, provides a great deal of empirical evidence about the forces which create hub prices.<sup>27</sup> Our research makes it clear that these forces are extremely complex and include: gas supply and demand conditions (including temperature) in Europe and globally, oil prices, coal prices, power prices, and carbon prices. Indeed our contention is that the multiplicity and complexity of the elements which impact on gas markets, and the speed with which these conditions change, are the major reasons why the move away from oil-linked pricing is inevitable.

Komlev suggests that our acknowledgement that some hubs act as no more than balancing points somehow supports his argument. He uses a chart on hub churn ratios to suggest that, aside from the NBP, they do not meet the liquidity criterion of a churn of 15 (the EU Gas Target Model figure is 8) saying that: ‘...churn ratios are low and do not look likely to increase’.<sup>28</sup> But even his chart shows that churn ratios are increasing at most hubs. More important than churn ratios, and completely missing from his paper, is any empirical evidence showing the increase in OTC and exchange trading; and the convergence of hub prices across Europe to an acceptable European reference which shows no evidence of manipulation. He fails to acknowledge that NBP prices have long been used, and that TTF prices are increasingly used, for risk management rather than simply for balancing.<sup>29</sup> Indeed, the great surprise of Komlev’s paper, given that he belongs to the corporate rather than the academic world, is that it contains very little appreciation of what is happening in the commercial gas markets of Europe. His insistence that:

‘Let us repeat it once again: in the existing hub pricing model there is only one benchmark: oil-priced gas. Other gas prices are merely derivatives of this one benchmark’.<sup>30</sup>

is simply a refusal to acknowledge the growing dominance of hub pricing.

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<sup>26</sup> Komlev p.46.

<sup>27</sup> See: Jonathan Stern and Howard Rogers, *The Transition to Hub-Based Gas Pricing in Continental Europe*, in Stern 2012, pp. 145–77; Patrick Heather, *Continental European Gas Hubs: are they fit for purpose?* OIES, 2012, <http://www.oxfordenergy.org/2012/06/continental-european-gas-hubs-are-they-fit-for-purpose/>; Stern and Rogers 2011; Alterman.

<sup>28</sup> Komlev Exhibit 20, p.48.

<sup>29</sup> For discussion of this see Heather.

<sup>30</sup> Komlev p.50.



## Conclusion

In his introduction Komlev says that: ‘The last thing we want is to be mistaken as solely representing the producers’ point of view’. But it is clear that he does not represent Norwegian, Dutch, or the many other producers who no longer oppose market-based pricing, and who have gone much of the way towards moving the prices in their long-term contracts away from oil and towards hubs. These producers have also resolved a problem which Komlev identifies, namely that traditional long-term contracts embody both commodity and flexibility (security).<sup>31</sup> New spot-indexed contracts contain no flexibility; buyers either have to provide this themselves (usually via owning storage capacity) or make an additional payment to the producer. This is the way to reflect the value of flexibility not, as Komlev suggests, to maintain oil-linked prices with some undefined proportion of the price representing a degree of flexibility which the buyer may or may not need.

He attributes to us the view that that we are: ‘...convinced that Gazprom is waging a losing battle to preserve its oil-indexed contracts’.<sup>32</sup> This is only partly correct. If Gazprom is determined to preserve oil-indexation in its long-term contracts then it will progressively lose market share in Europe – as it has done during the period 2008–12. A strategy of high price/low volume sales may be logical, but it does not fit with the building of a great deal of very large additional, relatively expensive, export capacity – such as Nord Stream and South Stream – designed to deliver gas to Europe. The question, therefore, is not whether Gazprom is waging a losing battle, but rather, which battle is Gazprom trying to win: a battle to maintain higher prices, or a battle to sell larger volumes?

Komlev does not like the conclusion from our research – that contractual linkage of European natural gas prices to oil no longer has any market reality, and is only held in place by existing long-term contracts. He refuses to recognize that this era is drawing to a close in Europe (and is subject to increasingly serious challenge in Asia) and refuses to accept that such changes represent a secular trend which will not be reversed. The extent to which Gazprom is willing to change its views will have a significant impact on Russian gas supplies to Europe, and hence on the future of the entire European gas market.

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<sup>31</sup> Komlev pp. 56–7.

<sup>32</sup> Komlev p.42.