



German
Advisory Group
Ukraine

German Advisory Group

Institute for Economic Research and Policy Consulting

Policy Paper Series [PP/05/2015]

How to unbundle Naftogaz: Options and Policy Recommendations

Georg Zachmann

Berlin/Kyiv, December 2015

About the Institute for Economic Research and Policy Consulting

Institute for Economic Research and Policy Consulting (IER) is the leading Ukrainian analytical think tank focusing on economic research and policy advice. The IER was founded in October 1999 by top-ranking Ukrainian politicians and the German Advisory Group on Economic Reforms.

The mission of IER is to present an alternative point of view on key problems of social and economic development of Ukraine. In frame of the mission IER aims at providing top quality expertise in the field of economy and economic policy-making; acting as real leader of public opinion through organisation of open public dialog; contributing to the development of economic and political sciences as well as promoting development of Ukrainian research community.

Institute for Economic Research and Policy Consulting

Reytarska 8/5-A,

01030 Kyiv, Ukraine

Tel: +38 044 / 278 63 42

Fax: +38 044 / 278 63 36

institute@ier.kiev.ua

www.ier.com.ua

About the German Advisory Group

The German Advisory Group on Economic Reforms, which has been active in Ukraine since 1994, advises the Ukrainian Government and other state authorities such as the National Bank of Ukraine on a wide range of economic policy issues and on financial sector development. Our analytical work is presented and discussed during regular meetings with high-level decision makers. The group is financed by the German Federal Ministry for Economic Affairs and Energy under the TRANSFORM programme and its successor.

German Advisory Group

c/o BE Berlin Economics GmbH

Schillerstr. 59

D-10627 Berlin

Tel: +49 30 / 20 61 34 64 0

Fax: +49 30 / 20 61 34 64 9

info@beratergruppe-ukraine.de

www.beratergruppe-ukraine.de

© 2015 German Advisory Group

© 2015 Institute for Economic Research and Policy Consulting

All rights reserved.

Which unbundling model for Naftogaz?

Executive Summary

To enable a competitive gas sector and to comply with European regulations Ukraine will have to unbundle Naftogaz. The European Gas Directive foresees four unbundling options and allows for private and for public ownership of the unbundled segments. Different EU member states chose very different unbundling models. The Lithuanian experience illustrates, that full ownership unbundling comes at a cost – but can play an important role in enabling new supply options. The Polish example shows that an independent transmission operator cannot be really independent if it is - together with the supply monopolist - still being owned by the state. Similarly, Hungary illustrates the limits of ensuring independence of the transmission system operator when it is still owned by the vertically integrated undertaking (even if it is fully privatised).

The Ukrainian gas sector features four characteristics that are relevant for the design of the unbundling regime: (1) The transmission system has ample excess capacity; (2) Gas transit represents an important share of income and flows in the transmission system; (3) Ukraine features significant issues of corruption and low regulatory quality and government effectiveness; And (4) Russia is able to undercut all alternative gas suppliers to Ukraine - allowing it to dominate the market.

Based on the international experience and the features of the Ukrainian gas sector we argue for a full ownership unbundling of Naftogaz and the privatisation of the individual parts. There are three main arguments:

- 1) The other three unbundling options can be excluded:
 - a. Maintaining a vertically integrated undertaking is not in line with the third energy package
 - b. An independent system operator (ISO) that is itself regulated and has to provide proper incentives to the system owner to carry out maintenance and investments is a very complex system – that is only suited for very developed legal systems.
 - c. Maintaining a vertically integrated undertaking, but making the transmission operator independent (ITO) is not unconceivable. But maintaining the integrity of Naftogaz will be met with scepticism by any potential new entrant – making market opening very difficult.
- 2) Ownership unbundling allows a deep restructuring of Naftogaz. This is crucial to improve the governance of the entire sector, and also for gaining trust by potential new-entrants in the gas production and supply business.
- 3) Privatization of the unbundled assets – especially the supply company - is an essential prerequisite to improve the governance of the system (see Polish example). In addition, privatizing the gas transmission system will signal that Ukraine is willing to cease political control over gas transit. Depoliticising gas transit is a prerequisite to convince its partners to rely on Ukrainian gas transit in the future.

Author

Dr Georg Zachmann

zachmann@berlin-economics.com

+49 30 20 61 34 64 0

Acknowledgements

The author would like to express his gratitude to Dmytro Naumenko and Katharina Kolb for excellent research assistance.

Table of contents

- 1. Introduction 2
- 2. Unbundling Options 3
 - 2.1. Full Ownership Unbundling (OU)..... 3
 - 2.2 Independent Transmission Operator (ITO)..... 4
 - 2.3 Independent System Operator (ISO) 5
 - 2.4. Independent Transmission Operator+ (ITO+)..... 5
 - 2.5. Public or private..... 6
- 3. Experience in three new EU member states..... 6
 - 3.1 PGNiG & Gaz-System two owned gas companies 6
 - 3.2 Lithuania – full ownership unbundling of privatized TSO..... 7
 - 3.3 Hungary – a partly privatised ITO 8
- 4. Adapting Unbundling to the Ukrainian situation 9
 - 4.1. An overbuilt system 9
 - 4.2. A transit and transmission system..... 11
 - 4.3. A governance problem 13
 - 4.4. Import structure 14
- 5. References..... 16

1. Introduction

Natural gas is a primary fuel for Ukrainian households and industry. Its efficient provisioning is not only crucial to keep energy-cost in check - but also to allow for a depolitisation of Ukraine's gas sector. Otherwise, the high cost of an inefficient system will encourage policy-makers to take a stronger role in the gas sector. The latter is very risky as it might quickly bring back subsidies to certain consumer groups which in turn increase the risks of high-level corruption and short-sighted deals with Gazprom.

A well-designed market can ensure the efficient provisioning of gas. But a market only works if competing companies can offer their services. Hence, the regulatory framework must ensure, that different competitor have access to the infrastructure that connects gas sources and consumers. As the pipelines that bring the gas to the consumers are typically operated by the incumbent (in Ukraine by Naftogaz) that in itself is one of the gas suppliers, the rules must ensure that the incumbent does not charge higher transmission tariffs or imposes less favourable access rules to its competitions. This so-called non-discriminatory Third Party Access was a crucial pillar of the first EU gas market liberalization package in 1992. As the results of this rule were not satisfactory – incumbents overcharged all network users - the next step (1998) was to set network access tariffs by regulators. But still, the European Commission concluded that incumbents managed to treat their own supplies more favourably than their competitors. Consequently, the third liberalization package enacted in 2009 foresees to unbundle the pipeline operation from the other business lines of the incumbents. The corresponding EU directive allows three unbundling regimes, among which the member states have to choose.

The third liberalization package is part of the Energy Community Acquis. All members of the Energy Community (and among them Ukraine) have committed to transpose the corresponding rules into their national legislation. With its gas law¹ Ukraine transposes the European Directive into Ukrainian law – the corresponding provisions do, however, not spell out how the vertically integrated Ukrainian gas company Naftogaz will be unbundled. This crucial decision will have to be settled in the next month. In October 2015 the Ukrainian Cabinet of Ministers approved the Action Plan on Naftogaz corporate reform.² But the Cabinet has not yet agreed on the model of Naftogaz unbundling.

In this paper we will lay out the different legal options for unbundling and provide some experience from central east European countries to deduce some policy recommendations for Ukraine.

Conclusion 1: Ukraine is legally obliged to unbundle Naftogaz' gas transmission business from its other business activities. Unbundling shall enable a gas market in which different suppliers can compete with Naftogaz. Ukraine can chose from different unbundling models.

¹http://www.naftogaz.com/files/Information/Ukraine%60s%20Natural%20Gas%20Market%20Law_engl.pdf

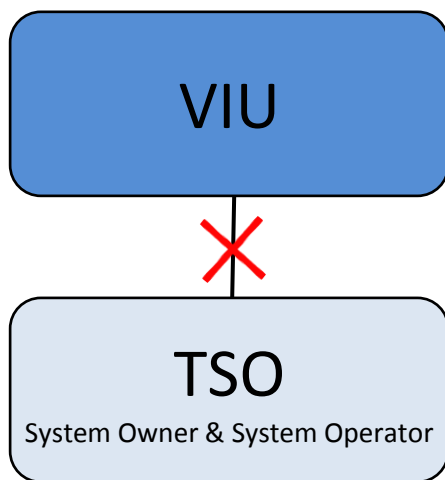
²<http://en.interfax.com.ua/news/economic/297122.html>

2. Unbundling Options

The European Gas Market Directive 2009/73/EC foresees three main unbundling options: full ownership unbundling (OU); Independent Transmission System Operator (ITO); and Independent System Operator (ISO) that we will briefly introduce in the following. In addition member states are free to choose, whether any part of the sector is owned by the state or privately owned.

2.1. Full Ownership Unbundling (OU)

Figure 1



Full Ownership Unbundling

Full ownership unbundling is the preferred option by the European Commission. The vertically integrated undertaking (VIU) does not own the transmission system owner and operator (TSO). So at most, the VIU is allowed to hold minority shares but only if those do not establish any rights in or control over the TSO³. The staff of the TSO and the VIU - including the members of the respective Supervisory Board, Administrative Board etc. – need to be different. Joint ownership of the VIU and the TSO by the state is allowed – but control over TSO and VIU needs to be exercised by separate public entities which in practice means different ministries⁴.

The unbundling also needs to ensure, that the VIU does not obtain an information advantage over its competitors – e.g., through sharing commercially sensitive information with the TSO. Hence IT systems need to be unbundled.

³ „Control“ definition established by the EC Merger Regulation: „Rights, contracts or any other means which, either separately or in combination and having regard to the considerations of fact or law involved, confer the possibility of exercising decisive influence on an undertaking.“ The key consideration in this regard is the concept of *decisive influence*.

⁴ E.g., the Swedish electricity VIU Vattenfall is controlled by the Ministry of Finance, while the electricity TSO Svenska kraftnät is controlled by the Ministry of Energy.

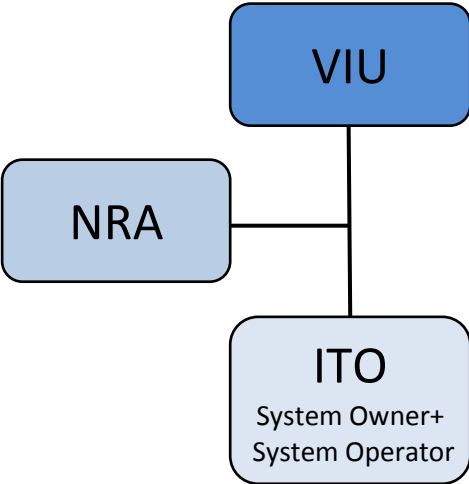
The TSO grants and manages third party access, it collects transmission charges, congestion charges, inter-TSO compensation and is responsible for investment planning. The TSO must own the property rights in the transmission grid. This obligation can be met by direct ownership of the grid (co-ownership also possible, e.g. gas pipelines) or indirect ownership through shares. Thereby, the transmission grid involves, both, direct parts of the asset transmission grid (e.g. pipeline) as well as indirect parts of the asset transmission grid (e.g. IT hardware and software). To safeguard the independence of the TSO, it needs to have “sufficient” financial, technical, and human resources available to conduct its tasks independently.

2.2 Independent Transmission Operator (ITO)

As according to many member states the European Commission went too far with the proposed full ownership unbundling – a less intrusive model was included in the Directive: the Independent Transmission Operator model. By end 2014 the European Commission had certified 21 gas ITOs.

Under the Independent Transmission Operator model, the owner and operator of the transmission system might be owned by the VIU (recall: this is forbidden under the TSO model above). Like for the TSO, all other rules that establish the independence of decision making within the ITO apply (separate premises, IT and security access systems, Supervisory Body independence, ITO has sufficient resources and personnel for its tasks, own „corporate identity“). The VIU is not allowed to render services and has no influence on day to day activities and the 10-years-investment plan of the ITO. This shall be strictly monitored by a dedicated compliance officer within the ITO and by the national regulator.

Figure 2
Independent Transmission Operator



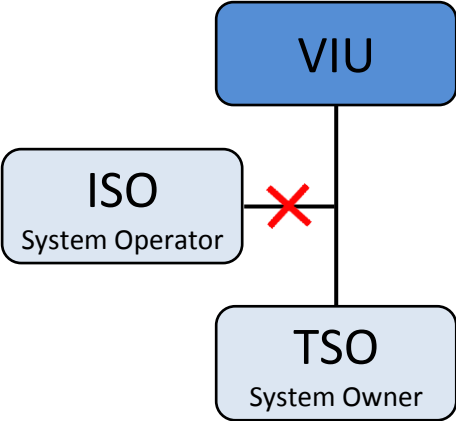
Detailed experience with the ITO⁵ model can be found in EC (2014) ‘Report on the ITO Model’. In general, the European Commission seems to be satisfied with the level of non-discrimination achieved by the ITO model.

2.3 Independent System Operator (ISO)

The third permissible option is that of an Independent System Operator. Here, the system is not operated by its owner, but by a third – fully independent company. This ISO is responsible for granting third-party access, collecting access charges, operation, maintenance and investment planning. At the same time the VIU that might (but must not) own the system should be fully ownership unbundled from the ISO. The System Owner receives regulated returns on its assets, but should act as an agent of the ISO in all decisions relating to the operation, maintenance and development of the network. The ISO can outsource some of its responsibilities – but not to the VIU or the System Owner.

Figure 3

Independent System Operator



In reality, giving the proper incentives to the owner for developing the grid and ensuring an efficient and flexible management of both maintenance and congestion is complex.

2.4. Independent Transmission Operator+ (ITO+)

The European Directive entails provisions for an alternative fourth choice for Member States. This option that may be referred as ITO+ or unbundling à la carte. It shall allow states to keep their own system, provided they ensure a higher independence status for the operation of the system than that of ITO and it already existed in 2009. This is hence not relevant for Ukraine.

⁵ Most surveyed “Compliance Officers indicated that they attend meetings of the management, supervisory board and/or stakeholders. Other examples of monitoring include conducting in-house training, liaising with the Human Resources and conducting on-the-spot audits. “

2.5. Public or private

The different unbundling options do not determine whether the unbundled companies will be in public or private hands. Consequently, a country might for each of the parts (ISO, SO, TSO, ITO, supplier) decide whether it is public or private. So there is a large number of possible combinations. This decision will, however, be as important as the decision on the unbundling regime.

Conclusion 2: There are a lot of different options to unbundle vertically integrated gas companies and to organise the final ownership of the individual parts (public-vs-private). So far, no ‘first-best’ solution has emerged and national circumstances and implementation seem decisive for the success of any model.

3. Experience in three new EU member states

Table 1

Comparison of gas transmission systems in Poland, Hungary and Lithuania

		Poland	Hungary	Lithuania	Ukraine
Gas TSO	Unbundling model	OU and ISO	ITO	OU	VIU
	Private Ownership %	0	100	82	0
Gas consumption		16.5 bcm	9.3 bcm	2.6 bcm	42.6 bcm
Gas production		4.6 bcm	1.9 bcm	0 bcm	20.5 bcm
Gas transit		17.5 bcm	17.7 bcm	4.1 bcm	62.2 bcm
Pipeline length		10,077 km	5,784 km	2,007 km	38,600 km
Storage capacity		3,480 mcm	6,330 mcm	500 mcm	30,950 mcm

Source: Eurostat, ENTSOG GRIP 2014-2023, Gas Infrastructure Europe; Naftogaz

3.1 PGNiG & Gaz-System two owned gas companies

Poland features a mixed system of two unbundling options. On the one hand, the state-owned Polish gas transmissions system operator Gaz-System owns and operates the gas transmission system and is unbundled from the largely state-owned PGNiG. On the other hand, the ownership of the Yamal pipeline (via Belarus and Poland to Germany) stays with the original consortium, but its operations is also conducted by Gaz-System. So for the Polish part of the Yamal pipeline Gaz-System acts as an ISO. Gaz-System is supervised by the Ministry of Economy, while PGNiG remains under the control of the Ministry of Treasury.

Poland chose this system to keep a strong political control over its gas transmission system – which it sees as of uttermost strategic interest and was unable to privatise its gas supply industry at the desired terms. PGNiG still controlled 95% of the gas sector in 2012, including production, imports, storage, wholesale and retail sales, and distribution (ERO, 2012). But whether this is actually serving

the strategic interest of the country can be disputed. Former PGNiG Vice President Andrew Parafianowicz argued that PGNiG is overstaffed and badly managed - including conflicts of interest. He argued, this resulted in delays in, both, interconnections with neighbouring countries and the building of the LNG terminal. In addition the commercial interest of the state-owned gas companies (especially PGNiG) do not perfectly align with the countries interest: for the company exclusive long-term contracts with Russia and own shale-gas developments are more profitable than shale-gas production by competing suppliers. These conflicts of interest, might have contributed to the persistence of long-term contracts, and the absence of significant private shale gas production.

Poland illustrates the need of proper institutional checks and balances, especially when state-owned companies are turning over billions of Euros. For example, the competition authority is regularly investigating PGNiG's behavior and the anti-corruption office has looked into Gaz-System⁶.

The OECD (2014) country report dedicates an entire section to State-ownership and Vertical separation in the Polish energy industry. It finds:

- “The current low share of alternative gas suppliers implies that third-party access is not working well, and it is unclear to what extent the creation of a gas exchange will increase competition, given PGNiG's dominant position.”
- “The government should consider ... fully separating the ownership of:
 - i) gas production from transmission, because both activities are owned by SOEs;
 - ii) gas production and wholesale sales from distribution;
 - iii) and iii) distribution system operators from gas suppliers. “
- “privatisation of the gas-supplying part of PGNiG, would ease the entry of new firms and limit possible political interference via the sector regulator. “

3.2 Lithuania – full ownership unbundling of privatized TSO

Lithuania is one of the countries that did ownership unbundling and privatized the gas transmission system. The Lithuanian example is particularly interesting, as the country was strongly discouraged to take this option by academics⁷ and the involved companies. In fact, the concerned companies (Lietuvos Dujos, which is mainly owned by Gazprom and E. ON, with a minority share (17%) being owned by the state) threatened to increase prices to Lithuanian customers in case of full ownership unbundling. While Gazprom reduced its gas prices for Estonia and Latvia in 2011, it refused to do so for Lithuania as the country planned to conduct full ownership unbundling. Hence, Lithuanian gas prices were among the highest in the EU. But Lithuania conducted unbundling of Lietuvos Dujos by splitting off the gas transmission company Amber Grid. Jankauskas (2014) argues that, both, lower gas demand and ownership unbundling are responsible for a 13% increase in gas transmission tariff in 2014.

⁶ Two directors of state-controlled gas transmission operator GAZ-SYSTEM suspected of the mismanagement of company fund have been detained by the anti-corruption bureau CBA. <http://wbj.pl/managers-of-gaz-system-stopped-by-cba/>

⁷ Jankauskas (2014) quotes Jonathan Stern

On the gas import price side - the situation changed with the opening of the Klaipeda LNG terminal in 2014. The availability of alternative gas sources for Lithuania forced Gazprom to also lower its prices in the country by 20 percent as it would have lost market share otherwise⁸.

So while ownership unbundling might in the short-term indeed have increased cost of gas transmission, it can also be seen as an important factor for enabling alternative imports – which might play an important role in the longer term.

The Lithuanian gas market is also more competitive than other CEE gas markets, with at least some consumers switching suppliers.⁹

3.3 Hungary – a partly privatised ITO

The partly state-owned (>25%) Hungarian oil and gas company MOL owns the gas transmission company FGSZ. To comply with the third package Hungary chose the ITO model. In terms of international infrastructure FGSZ was quite successful. Possibly in line with the interest of its mother company, FGSZ managed to enable reverse flows into Ukraine and strengthen international connections with Romania, Austria, Croatia and Slovakia.

Hungary started privatization of its gas sector as early as 1995. But the picture started to change in the late 2000's. In 2009 Hungary prevented a takeover of MOL by the Austrian OMV. The acquisition of the 20% share held by OMV to the very opaque¹⁰ Russian gas company Surgutneftegas was voided – so that the Hungarian state maintains a blocking minority in MOL. At the same time – the state regulated down gas prices, increase taxes for these companies and the Hungarian state-owned electricity company MVM started to enter the gas business by buying the now less profitable private gas companies (e.g. E.on Hungary, and RWE's Fögáz).

Repeated scandals over shady gas traders with political connections illustrate the risks that the significant sums involved in gas trading with Russia have for the political systems¹¹. The problem that is very difficult to address is, that sending under-priced gas to foreign companies is a convenient way to transfer almost unlimited wealth from Russia to those companies, which might then potentially use it in exchange for political favours.

The partial re-nationalization of the gas industry in Hungary allowed the government to lower gas prices for final customers at the expense of the private gas companies, without having to fear supply shortages. Keeping the prices low for a longer period of time, however, requires low gas import prices. This is what Gazprom offered, arguably in return for political favours¹². So Hungary's gas industry is currently being retransformed into a state-run operation of politically determined prices.

⁸ <http://en.delfi.lt/lithuania/energy/klaipeda-lng-terminal-one-year-on-independence-or-responsibility.d?id=69528746>

⁹ http://ec.europa.eu/priorities/energy-union/state-energy-union/docs/csw_monitoring-progress-energy-union_en.pdf p.81

¹⁰ <http://www.nzz.ch/finanzen/im-schatten-des-russischen-riesen-1.18249039>

¹¹ <http://energyscee.com/wp-content/uploads/2015/02/HU-BG-Energy-Investment-UEF-Conference-final.pdf>

https://wikileaks.org/plusd/cables/09BUDAPEST356_a.html

<http://www.tagesanzeiger.ch/wirtschaft/unternehmen-und-konjunktur/Ein-Firmennetzwerk-das-sich-eine-Zuger-Adresse-und-die-Naehe-zu-Orban-teilt/story/25579199>

¹² <http://www.naturalgaseurope.com/hungary-and-the-true-cost-of-russian-gas-22287>

In our context, we have to acknowledge that a different unbundling and ownership structure of the gas transmission system could not have prevented such an outcome – which was driven by the Hungarian government that had a strong democratic legitimization.

Conclusion 3: EU members found very different arrangements to implement unbundling. Thereby, the unbundling model is only one piece of the puzzle and can hardly be evaluated in isolation, and irrespective of the national circumstances. The Lithuanian experience illustrates, that full ownership unbundling comes at a cost – but can play an important role in enabling new supply options. The Polish example shows that an independent transmission operator cannot be really independent if it is - together with the supply monopolist - still being owned by the state. Finally, Hungary illustrates that initial market-liberalisation is not irreversible.

4. Adapting Unbundling to the Ukrainian situation

The optimal unbundling model depends on the characteristics of the gas sector - and the Ukrainian gas sector features a number of unique features we will discuss in the following.

4.1. An overbuilt system

Table 2

Current usage compared to maximum usage of Ukraine’s gas transmission infrastructure

	Highest level	Current level (2014-2015E)	Usage
Natural gas demand (bcm/y)	76.4 (2005)	34.0 ^A – 36.0 ^B (2015E)	45% - 47%
Peak daily gas demand (mcm/d)	312 (Feb 2012)	236 (Jan 2014)	76%
Gas storage maximum fill	31.0 (designed capacity)	18.5 (Nov 2015)	60%
Annual gas transit volume	141.1 (1998)	65.0 – 66.0 (2015E ^C)	46 - 47%
Peak daily gas transit rate (mcm/d)	444 (designed capacity)	240 (Jan 2014)	54%

Notes: E - estimates from different sources; A - Estimate by JSC Ukrtransgaz as of June 2015; B - Estimate by the Ministry of Energy as of November 2015; C - Estimate by JSC Ukrtransgaz as of October 2015

Sources: Naftogaz, Ukrtransgaz, the Ministry of Energy, GIE¹³

¹³ Naftogaz:

It has been argued that vertically unbundled gas transmission systems underinvest in new pipelines. In particular, the literature points to a chicken-and-egg problem, when expensive new infrastructure is needed to connect potential new supply sources. Here, the TSO and the production company would both prefer to wait until the other one finalised its part of the project (also their banks would not like to finance the production/pipeline project without the pipeline/production already running). In this situation, vertical integration can make sense.

Ukraine features a gas system that has been constructed to accommodate a significantly higher demand, significantly larger transit flows and significantly larger gas storage volumes than what is currently used. While the future usage of the system will depend on several difficult to predict factors (economic development in Ukraine, gas demand in the EU, completion of Nord Stream II) it is very unlikely that the Ukrainian system will require significant capacity extension in the coming decade. So investment will be mainly required for maintenance and efficiency improvements of existing capacities. Hence, a key-argument for vertical integration of gas supply and transportation: the co-optimisation of transmission-capacity extensions and the development of new supply sources does not play a major role in Ukraine.

Conclusion 4: Ukraine will require modernisation, but not significant expansion of its gas transmission system in the medium term future – hence one key argument against strong vertical-unbundling: underinvestment in new supply routes – is of limited relevance.

<http://naftogaz-europe.com/article/en/GasConsumptioninUkraine> (historical annual gas consumption series)

<http://naftogaz-europe.com/article/en/NaturalGasTransitviaUkraine> (historical annual gas transit series)

The Ministry of Energy:

<http://economics.unian.ua/energetics/1196486-minenergovugillya-pronozue-skorochennya-spojivannya-gazu-na-155-demchishin.html> (2015 demand estimate)

http://mpe.kmu.gov.ua/minugol/control/publish/newscategory?cat_id=35081 (historical monthly gas consumption and transit series)

Ukrtransgaz:

<http://en.interfax.com.ua/news/economic/274264.html> (2015 gas demand estimate)

<http://en.interfax.com.ua/news/economic/300043.html> (2015 gas transit estimate)

GIE (Gas Infrastructure Europe):

<http://transparency.gie.eu/index.php/historical> (historical daily gas storage series)

4.2. A transit and transmission system

Table 3

Comparison of flows and revenues from gas transit and gas transmission in Ukraine

	Volumes, bcm	Income, USD bn
Gas transmission 2014	38.1	0.61
Gas transmission 2015E	~31.0 ^A	~0.5 ^B
Gas transit 2014	62.2	1.4
Gas transit 2015E	65.0 - 66.0	1.5 ^D

Notes: E - estimates from different sources: A - Own estimate based on estimated domestic gas demand in 2015 (at 36 bcm) excluding consumed technical gas (~5 bcm). B - Own estimate based on average transmission fee for Ukrtransgaz set in October 2015 (at UAH 236.70 per tcm). C - Estimate by JSC Ukrtransgaz as of October 2015.

D - Estimate by Naftogaz as of November 2015.

Sources: Naftogaz, Ukrtransgaz, the Ministry of Energy, NERCU¹⁴

Ukraine's gas transmission system serves two main functions (1) connecting domestic suppliers and consumers; and (2) bringing gas from Russia to the EU. These two functions are not technically separated – the key pipeline strings and the storage system in Ukraine serve both functions. But transit volumes were significantly larger than domestic transmission volumes. In the past, Ukraine was able to benefit from its role as major gas transit country. Gas transit revenues were five times larger in 2015, than revenues from domestic gas transmission. In the absence of sufficient alternatives, Gazprom had to agree on transit prices that were potentially above the cost of running the transits, and it was used as a leverage in negotiations about Ukrainian gas import prices. But we currently experience a structural shift in this relation. Ukraine reduced its imports from Russia significantly and Russia reduced gas transit volumes. In the future, Ukrainian imports from Russia might fall to close to zero if the country decides to buy all its gas from the West. And Russia might cut gas transit to close to zero when Nord Stream II is completed. Both decisions would not be economic.

¹⁴ Naftogaz:

http://www.naftogaz.com/files/Zvity/Naftogaz_Annual_Report_2014_engl.pdf (Annual report 2014, pages 124, 131; historical annual series for transit and transmission volumes, and respective revenues)

<http://biz.liga.net/ekonomika/tek/novosti/3159178-naftogaz-v-etom-godu-mozhet-zarabotat-1-5-mlrd-na-tranzite-gaza.htm> (gas transit revenues estimate for 2015)

Ukrtransgaz:

<http://en.interfax.com.ua/news/economic/300043.html> (2015 gas transit revenues estimate)

The National Electricity and Utilities Regulatory Commission (NERCU)

<http://www.nerc.gov.ua/?id=16449> (average gas transmission fee for JSC Ukrtransgaz from October 2015)

So the Ukrainian gas transmission system might be faced with two completely different scenarios: (1) negligible transit and most imports from the West; and (2) significant transit and imports from the East. The first scenario will call for some investments into optimising the system for the new gas flows. Most importantly, the economics of the two scenarios are quite different. While in the first scenario, the transmission system will be mainly financed by domestic gas transmission users, transit revenues will be a backbone of the income of the TSO under the second scenario. Thereby, it is not purely external factors that will determine whether the first or second scenario materialises. To enable the second scenario – which is much more economic for all involved parties - the Ukrainian gas sector would have to be credibly depoliticised (because it is also less politically resilient).

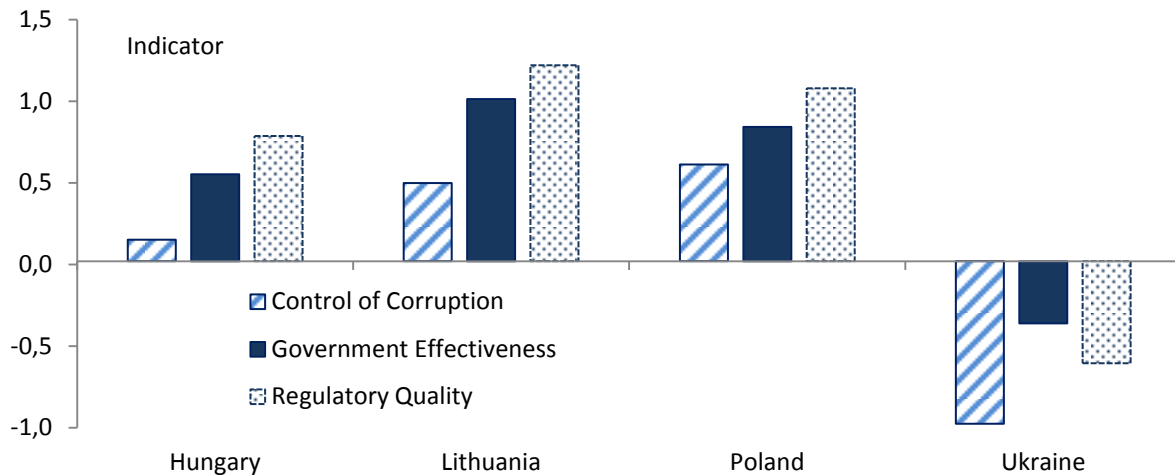
Delivering a consistent regulatory framework for a system that might feature two completely different *modus operandi* is challenging, but not impossible. One challenge is, that very volatile shares of income might come from transit and transmission. In Ruester and Zachmann (2014) we suggest to shield domestic consumers from these volatilities, by putting transit revenues into another pocket. Another challenge is to depoliticise gas transit – in order to convince the transit users (Gazprom and Western suppliers) that no alternatives to Ukrainian transit are needed. So, while there are good reasons to maintain gas transmission systems under state-ownership (e.g., public can be more directly ensure that the TSO acts in line with the public interest) – in the Ukrainian case there are better reasons to privatise the TSO.

Conclusion 5: Ukraine will require a regulatory framework that can accommodate significant transit flows (and corresponding revenues), but also needs to be financially resilient to the absence of these flows – separating market areas to isolate transit rents from the core-transmission business might help to achieve this. In addition, privatising the transmission system would be an important signal to foreign transit users.

4.3. A governance problem

Figure 4

World Bank Governance Indicator - 2014



Source: World Bank

Note: Regulatory Quality reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Control of Corruption reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Government Effectiveness reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Energy sectors are always run in some form of public-private cooperation. The EU ideal is a hands-off approach with a system of finely tuned checks-and-balances in which an independent regulator oversees a system of well-designed markets and complex incentives to achieve optimal investment, production and consumption decisions. So the regulatory quality matters a lot. The Ukrainian track-record in terms of regulatory quality is pretty bad – see Figure 4. So a regulatory system has to accommodate this fact and trade-off efficiency and resilience against suboptimal regulatory decisions to some degree. This does, however, not mean that a completely vertically integrated state-owned industry is the solution, as in terms of control of corruption and government effectiveness, Ukraine also performs much worse than CEE countries.

In a prolonged transition period, it might thus be sensible to anchor sector rules in foreign institutions. This has already happened in the past, when Ukraine signed the Energy Charter that allows investors to proceed against the Ukrainian administration in foreign courts; and when contracts foresaw foreign courts for dispute settlement. The Ukrainian membership in the Energy Community and the conditions Ukraine submitted itself to in the Association Agreement also anchor important parts of Ukrainian energy sector rules in international institutions.

In the past, foreign investors with good governance practices were unable to become successful in the Ukrainian gas sector. Welcoming foreign companies, especially as shareholders in gas transmission, could be both a credibility anchor (due to the foreign investor protection) and might allow positive spillovers from good governance practices of multinational energy firms into the Ukrainian gas sector.

Conclusion: Ukraine continues to face issues of corruption and bad governance at all levels. Involving foreign shareholders in gas transmission and anchoring Ukrainian regulation in international rules would be instrumental to break bad old habits. Hence, privatisation, especially to reputable multinationals, would not only bring investments and technical know-how, but also improve governance.

4.4. Import structure

In the past Ukraine required massive gas imports (2000-2007: ~60 bcm/y) and those almost exclusively came from one foreign supplier, Gazprom. Through reduced import requirement (2015p: 26 bcm) and increase gas imports from Western Europe (>60%) the picture became more balanced. But in fact, Russia remains the supplier with the most competitive cost structure in Europe. Thus, it could at any point in time decide to price-out its competitors. So if Russia chooses to capture a competitive Ukrainian gas market – it will just have to supply one single Ukrainian supplier with gas that is cheaper than the gas it supplies to Slovakia. Such a privileged Ukrainian supplier would be entirely dependent on Gazprom and could easily serve as a tool to channel huge sums of money, also into the political system (corresponding examples from other CEE countries and Ukraine's past are well known). Competition policy¹⁵ and transparency requirements are some tools to mitigate the problem. More structural solutions – such as gas-release programs (such as in Poland¹⁶) or ceilings on supplies from individual countries (such as in Spain¹⁷) – should be considered carefully, but cannot be discussed here.

Conclusion 6: The ability of Russia to make cheap gas available to individual suppliers will remain a constant threat to the development of a resilient market in Ukraine.

¹⁵ In Poland the Office of Competition and Consumer Protection is regularly investigating into PGNiG (Example: https://uokik.gov.pl/aktualnosci.php?news_id=11931).

¹⁶ The government introduced obligations for PGNiG and other important gas trading companies to sell 30%, 40% and 55% of the gas entering the Polish network on the exchange in 2013, 2014 and 2015, respectively. http://en.pgnig.pl/documents/18252/54795/20120220_092800_EN_Gas_Release_Programme_EN1418732657717.pdf

¹⁷ Spain had a double ceiling: no supplier was allowed to account for >70% of total consumption and import from one single country was capped at 60% .

4.5. Policy Conclusion

Based on the case studies and the unique features of the Ukrainian gas sector we strongly argue for ownership unbundling of the gas transmission system and for its privatisation. To justify ownership unbundling we refer to the evaluation scheme of Haucap, Heimeshoff and Uhde (2007). They propose to evaluate the importance of five criteria, in order to select an appropriate unbundling regime:

- i. Ability to discriminate by the incumbent and ability of the regulator to control this.
- ii. Economies of scope that will be lost through unbundling.
- iii. Impact of unbundling on investments.
- iv. Impact of unbundling on „economies of scale“.
- v. Impact of unbundling on technological innovation.

The first issue (ability to discriminate) is an important concern as institutions are still weak (see 4.4), while increasing domestic production by private competitors seems possible and highly desirable – consequently a strong unbundling regime is desirable. Ownership unbundling allows a deep restructuring of Naftogaz. This is crucial to improve the governance of the entire sector, and also for gaining trust by potential new-entrants in the gas production and supply business. On the other hand, economies of scale and scope as well as innovation incentives seem to be less important in the gas sector than in other infrastructure industries. And, there is limited need for new investments into the pipeline system (see 4.1). Hence the main drawbacks of strong unbundling are not prevalent in the case of the Ukrainians gas transmission system. So we would argue for the strongest form of unbundling – ownership unbundling.

In the current situation, privatising the gas transmission system would be the most appropriate solution. It will signal that Ukraine is willing to cease political control over gas transit. And depoliticising gas transit is a prerequisite to convince transit users that they can rely on Ukrainian gas transit in the future, and that hence Nord Stream II is superfluous. In addition, privatisation is more likely to result in improved management of the company and private ownership of the network will require making regulation of the system transparent. As argued in Zachmann (2015) immediate privatisation to a private investor might not be feasible. There is chicken and-egg problem: the necessary regulatory reforms only make sense if the company is privatised, but no investor will buy the transmission system unless there is some track-record of good regulatory practices. In Zachmann (2015) I argue that some form of pre-privatisation – i.e., selling a share of the gas transmission system to an international financial institution (such as EBRD) – could resolve this chicken-and egg problem.

Finally, also the storage and production arm of Naftogaz should better be privatised – as public ownership is likely to be an impediment to opening the sector to competition (see Polish example), which is essential to keep prices at cost-reflective levels and encourage new-entrants into production.

For a sustainable gas market in Ukraine transposing the third package and unbundling Naftogaz is necessary, but not sufficient. One crucial prerequisite for a sustainable market framework is to introduce sensible rules to prevent the adverse impact of gas imports from Russia. Otherwise, there is a non-trivial risk that Russia might buy political influence in Ukraine by gas selling gas at advantageous prices (e.g., through Ukrainian intermediates).

5. References

EC (2014) Commission Staff Working Document Report on the ITO Model, SWD (2014) 312 final, Brussels, 13.10.2014. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014SC0312&from=EN>

Haucap, J., Heimeshoff, U. and A. Uhde (2007) Vertikale Entflechtung netzgebundener Industrien: Kosten und Nutzen aus ökonomischer Sicht in: Gesellschaft für öffentliche Wirtschaft (ed.): Trennung von Infrastruktur und Betrieb, Beiträge zur öffentlichen Wirtschaft 25, Berlin 2007, S. 27-65.

Jankauskas; V. (2014) Implementation of different unbundling options in electricity and gas sectors of the CEE EU member states, energetika T. 60. Nr. 1. P. 44–53

OECD (2011) <http://www.oecd.org/daf/competition/50056685.pdf> Report on Experiences with Structural Separation 2011

OECD (2014), OECD Economic Surveys: Poland 2014, OECD Publishing. http://dx.doi.org/10.1787/eco_surveys-pol-2014-en

Ruester, S. and G. Zachmann (2014) Improving gas transmission network regulation in Ukraine by implementing Energy Community rules - a tailor made proposal, German Advisory Group Policy Paper PP/03/2014.

Zachmann, G. (2015) Helping Ukraine to reform Naftogaz's gas transmission business. Kyiv Post op-ed Nov. 13, 2015.

List of recent Policy Studies

- Implications of an economic detachment of the rebel-held area, by Ricardo Giucci, Robert Kirchner, Vitaliy Kravchuk, David Saha and Georg Zachmann, Policy Study PS/01/2015
- Economic Reform Agenda for Ukraine, by Ricardo Giucci, Robert Kirchner, Georg Zachmann, Stephan von Cramon-Taubadel, Policy Study PS/01/2014

List of recent Policy Papers

- A cluster development programme for Ukraine: Design principles and key features, by Bjoern Vogler, David Saha and Olha Krasovska, Policy Paper PP/04/2015
- The industrial sector of Ukraine: trends, challenges and policy options, by David Saha, Vitaliy Kravchuk, Policy Paper PP/03/2015
- Foreign Direct Investment in Ukraine: Past, Present, and Future, by Robert Kirchner, Vitaliy Kravchuk and Julian Ries, Policy Paper PP/02/2015
- Main elements of a creditor protection system: Key recommendations, by Robert Kirchner, Cyrus de la Rubia and Vitaliy Kravchuk, Policy Paper PP/01/2015
- Decision-making and accountability in an inflation targeting central bank: Recommendations for Ukraine, by Robert Kirchner, Ricardo Giucci, Cyrus de la Rubia and Vitaliy Kravchuk, Policy Paper PP/04/2014
- Improving gas transmission network regulation in Ukraine by implementing Energy Community rules - a tailor made proposal, by Georg Zachmann and Sophia Ruester, Policy Paper PP/03/2014
- Ukrainian Machine Building: Strategic options and short term measures in view of trade disruptions with Russia, by David Saha, Ricardo Giucci and Dmytro Naumenko, Policy Paper PP/02/2014

List of recent Policy Briefings

- Supporting internally displaced people in Ukraine. Selected policy recommendations, by Hanna Brenzel, Oleksandra Betliy and Robert Kirchner, Policy Briefing PB/16/2015
- A cluster support programme for Ukraine. Design principles and key features, by Bjoern Vogler and David Saha, Policy Briefing PB/15/2015
- Ukraine's imports in the first half of 2015, by Veronika Movchan, Vitaliy Kravchuk, Mykola Ryzhenkov and Ricardo Giucci, Policy Briefing PB/14/2015
- Ukraine's exports in the first half of 2015, by Veronika Movchan, Vitaliy Kravchuk, Mykola Ryzhenkov and Ricardo Giucci, Policy Briefing PB/13/2015
- Promoting clusters to foster industrial development – Key features and benefits of the cluster approach, by Bjoern Vogler, David Saha, Policy Briefing PB/12/2015
- Cancellation of FTA between Ukraine and Russia? Estimation of impact on Ukrainian exports, by Ricardo Giucci, Mykola Ryzhenkov and Veronika Movchan, Policy Briefing PB/11/2015
- The industrial sector of Ukraine: Trends, challenges and policy options, by David Saha and Vitaliy Kravchuk, Policy Briefing PB/10/2015

Papers, briefings and further publications can be downloaded free of charge under <http://beratergruppe-ukraine.de/?content=publikationen/beraterpapiere> or http://www.ier.com.ua/ua/archives_papers.php. For more information please contact the German Advisory Group on info@beratergruppe-ukraine.de or IER on institute@ier.kiev.ua