

Infrastructure Monitoring for Ukraine (IMU)

No. 8/2006

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List of abbreviations

AMC - Antimonopoly Committee

bcm - billion cubic meters

CMU – Cabinet of Ministers of Ukraine

EBRD – European Bank of Reconstruction and Development

ECU - Energy Company of Ukraine

EU – European Union

IMU – Infrastructure Monitoring of Ukraine

MTCU – Ministry of Transport and Communication of Ukraine

NCRC - National Commission for Regulation Telecommunication

NERC – National Electricity Regulatory Commission

PPP - Public-private partnership

RUE - RosUkrEnerg

tcm - thousand cubic meters

UGE - UkrGasEnerg

USD - United States Dollars

UZ - Ukrzaliznytsia



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Foreword	4
1. Summary	5
2. History of Ukrainian Infrastructure Policies in 2000 - 2005 .	6
3. Ukrainian Infrastructure Policies August 2005-August 2006	8
3.1 Telecommunications	9
3.2 Railways and transport	12
3.3 Roads	15
3.4 Power	17
3.5 Gas	21
3.6 Water and wastewater	26
Appendix 1. Infrastructure Indicator evaluation	30
Appendix 2. General description of the infrastructure indicators .	32
Appendix 3. Explanations for the infrastructure indicator evaluations given in Appendix 1 (August 2005 - August 2006)	36



Foreword

This is the eighth “Infrastructure Monitoring for Ukraine” report issued by the Institute for Economic Research and Policy Consulting in Kyiv. It presents information on the restructuring of six key infrastructure sectors of the Ukrainian economy in a standardized manner, which allows for cross-industry comparisons.¹ When developing the evaluation methodology the Institute for Economic Research and Policy Consulting followed the EBRD’s approach. Monitored indicators are qualitative and fall into three broad categories: (1) commercialisation, (2) tariff reform, and (3) regulatory and institutional development. Twenty-one indicators allow for economic and policy-making analysis at different aggregation levels. The indicators are constructed in a way that represents the status of the reforms in each sector at a given moment in time. An extensive discussion of the methodology employed was presented in the first issue of IMU.² Several marginal changes were introduced in the second issue when more complete information became available to assure time-consistency and cross-industry comparability of the indicators.

The structure of this issue of IMU was elaborated compared to previous publications. Section 1 contains an executive summary that outlines major developments within selected sectors of the infrastructure during the period from August 2005 till August 2006. Next, in Section 2, an article about development in the sectors monitored from the first issue of IMU till the last one was added. It describes main achievements and losses of the economic policy in the infrastructure sectors. A general analysis of the Ukrainian infrastructure policies is presented in Section 3. The detailed study of reforms in each of the six sectors includes not only an ex-post analysis, but also an outline of major challenges to future development. A description of the reform progress in each infrastructure sector supplements the numerical evaluation and provides a broader view of the situation. This time, a short description the role of the sectors in the economy was added. Appendixes summarize the evaluations in tabular form and provide methodological explanations and detailed comments for each indicator.

¹ For earlier issues, see Infrastructure Monitoring for Ukraine, which can be downloaded from the Institute’s website at [http://www.ier.kiev.ua/English/IMU_eng.html].

² IMU No. 1, June 2001, see also IER Working Paper No 8 [http://www.ier.kiev.ua/English/WP/2001/WP2001_eng.html].



1. Summary

The indicator for **Telecommunications** increased from 2.40 to 2.50, mainly because the institutional regulation somewhat improved due to the widening the scope of activities of the national regulator. Besides, the tariff setting policy also tends towards the decrease of the cross-subsidization and enhancing the competition on the market. While the planned increase of tariffs is expected to introduce market rules, the social orientation of policies remained rather high. Mobile and Internet segments remained the most dynamic segments of the telecommunication market.

The indicator in the **Railways** sector indicator grew slightly from 1.78 to 1.80 mostly due to changes in tariff policy. Cost effectiveness of railway passenger transportation slightly improved as well as cross subsidization of passenger transportation by freight has reduced. At the same time, other changes in the railway sector management, in particular, transferring the power to set tariffs for freight transportation from the CMU to the MTCU, did not affected the indicator since in the absence of independent regulation this steps raise some concerns.

The indicator for **Roads** increased from 2.29 to 2.37, mainly due to the improvement in financing of roads maintenance and construction and ease of the access to infrastructure. The planned sector reforms should improve operation and organizational structure. Besides, the government also plans to solve the problem of scarcity of funds by attracting private money for public infrastructure.

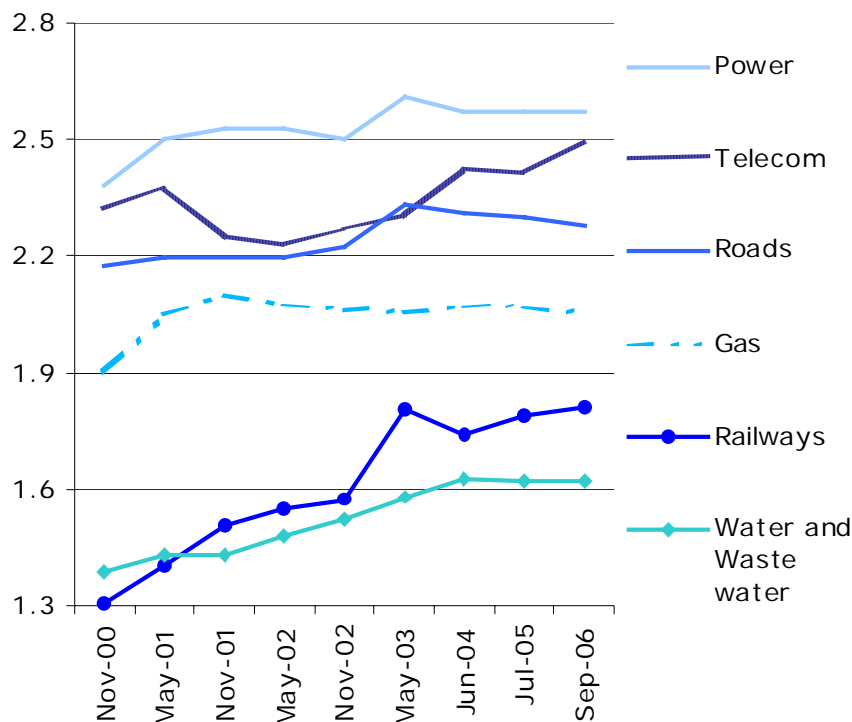
The overall indicator for the **Power** sector remained unchanged at 2.56 in spite of some improvements in tariff structure. During the discussed period electricity tariffs for household were reviewed three times, having improved cost effectiveness of the tariffs. The CMU also has approved the Energy strategy of Ukraine till 2030, which only describes technical parameters of the sector that should be achieved, while structural reforms in the sector are not discussed.

The indicator for **Gas** was reduced from 2.06 to 2.04 mainly due to the deterioration of payment discipline and increased difference in cost-effective and actual tariffs. The planned reform of the tariff policy should improve the deprived structure of tariffs; however, it promises to be socially oriented. The government also undertake measures that should improve the future payments. Besides, the signed Ukrainian – Russian gas agreement has motivated the government to think of future reforms that should improve operation in the sector and foster commercialisation and privatisation.

The aggregate indicator for the **Water and wastewater** sector stayed 1.61 in spite of slight improvement in tariff policy. The CMU has approved the methodology of calculation of cost effective tariffs for water supply and wastewater treatment services, which lays the foundation of more commercial approach to tariff-setting in the sector. The state has also created a plan of urgent actions in reforms in the sector, the results of implementation of which, however, remains to be seen.



Figure 1
IER infrastructure indicators for Ukraine



Source: Own estimations

2. History of Ukrainian Infrastructure Policies in 2000 - 2005

No break-through reforms were observed in infrastructure sectors during 2000 – 2005. The most liberalized infrastructure sectors of Ukraine have remained power and telecommunication sectors, which follows international experiences in infrastructure policies. Moreover, the most of liberalization reforms in telecommunications were made already before 2000.

The key common achievement in all sectors was combating non-payments problem and a low level of cash payments. These problems were almost solved. The consumers' current payments collection rate rises approaching 100%. However, the problem of payment of old debts in the sectors is still the issue, especially in power.

Also, tariff reform was observed in all sectors except roads. The reforms proceed toward elimination of cross-subsidization and cost effectiveness of tariffs. In 2006 the tariff reform in the sectors was activated in response to



external energy price shock. Still, however, tariff-setting procedure lacks transparency and economic justification.

The independent regulatory body is settled only in two infrastructure sectors – in power and telecommunications, which is very important for the future development of these sectors. However, there are some drawbacks. In power sector, the law does not support the performance of the regulator, while the telecommunications regulator does not actually plays an adequate to its position role.

If we consider the developments in each sector separately, in telecommunications in 2000-2005 major changes concerned growing profitability of investment in local networks, increasing private activities, and improvements of inter-payments and interconnections. The law “On telecommunications” was the major progress in normative base, while an establishment of independent regulatory body in the sector – the National Commission for Regulation Telecommunication – improved an institutional organization of the sector. Despite these developments, the privatisation of a state monopolist in providing fixed-line communication has been postponed.

In power and railway sectors the main achievements were made in organizational structure, which were improved mainly through ownership reform, i.e. privatisation of power distribution companies in power sector, and separation of the potentially competitive businesses from the railway infrastructure and rolling stock management in railway sector. Increase of private participation was also observed in water supply companies, however, the number of such cases is too small to change situation. The decentralization and commercialisation processes in the sectors had been currently slowed down. The creation of the Energy Company of Ukraine moved the power sector away from the previously promoted course towards privatisation and vertical unbundling in the sector. Also, the UZ remains a department of the Ministry; the enterprise is not corporatized despite numerous promises.

The policy in roads sector was characterized by the improvements in the management, organizational structure, and the regulatory environment. The regulatory and management functions were separated, more attention was paid to the concession programs, the decision making process slowly became more transparent, and the private sector got bigger share in the execution of government orders and provision of transport services. Still the indicators designed for the sector suggest that the sector is functioning at the level, which is far from its potential and thus require further reforms. Currently, the road sector biggest problems are associated with insufficient financing, and inadequate tariff policy.

Aside from the success in payments, the Ukrainian gas sector of the mid of 2006 continues to be comprised with the problems of poor regulatory climate, low level of tariffs and their deprived structure, absence of equal access to the infrastructure, low energy efficiency, and lack of investments. Driven by increase in gas prices in EU region and political considerations, the new Russian-Ukrainian gas agreement was signed at the beginning of 2006. As a result Ukraine had to face higher price of imported gas for the economy, new conditions of imported gas supply, and new arrangements of transit of gas through the territory of Ukraine. This pushed the



government to start implementing measures aimed at greater energy efficiency, cost-covering tariffs, strengthened payment discipline, and intensification of domestic gas extraction.

The least developed is water supply and wastewater treatment sector, the reforms in which are very sluggish. The indicator for the sector was slightly improved due to improved payment collection and increased local responsibilities for the problem in the sector. However, for the last several years the sector did not experience any serious structural changes. The state demonstrated a lack of strategy to improve the industry's regulatory framework.

Summing up, there were some reforms and achievements in liberalization of the infrastructure sectors that contributed to the sectors development. However, in recent years serious structural reforms in the sectors were postponed.

3. Ukrainian Infrastructure Policies August 2005 - August 2006

The main achievements in infrastructure sectors were made in tariff reform. Responding to external challenges, the governments improved cost-effectiveness of tariffs and reduced cross-subsidization in most infrastructure services.

The policy in **telecommunications** in 2005-2006 was directed at the institutional improvements by the widening the scope of activities of the NCRC. Besides, the tariff setting policy also tends towards the decrease of the cross-subsidization and enhancing the competition on the market. In the **railways** sector cost effectiveness of railway passenger transportation slightly improved, while cross subsidization of passenger transportation by freight has reduced. The policy in **roads** improved the financing of roads maintenance and construction and eased of the access to infrastructure. The situation in the **power** is pretty much the same as in previous year in spite of some improvements in tariff structure. Energy strategy of Ukraine till 2030 was approved. However it only describes technical parameters of the sector that should be achieved, while structural reforms in the sector are not discussed. The situation in the **gas** sector has worsened due to the deterioration of payment discipline and increased difference in cost-effective and actual tariffs. At the same time, the signed Ukrainian – Russian gas agreement has motivated the government to think of future reforms that should improve operation in the sector and foster commercialisation and privatisation. In **water and wastewater** the CMU has approved the methodology of calculation of cost effective tariffs for water supply and wastewater treatment services, which lays the foundation of more commercial approach to tariff-setting in the sector. The state has also created a plan of urgent actions in reforms in the sector, the results of implementation of which, however, remains to be seen.



3.1 Telecommunications

In 2000-2004 the total nominal output of post and telecommunication services has almost tripled from UAH 7 m to UAH 20 m (Table 1), mainly driven by the growing demand for mobile and Internet services against the background of stable or even reducing prices for services. During the same period, old equipment has been replaced by new technologies, especially in fixed-line telecommunication services. Accordingly, the share of profits in value added has expanded from 47% in 2000 to 65% in 2004, while the share of net taxes on production and imports declined from 14% to 6%.

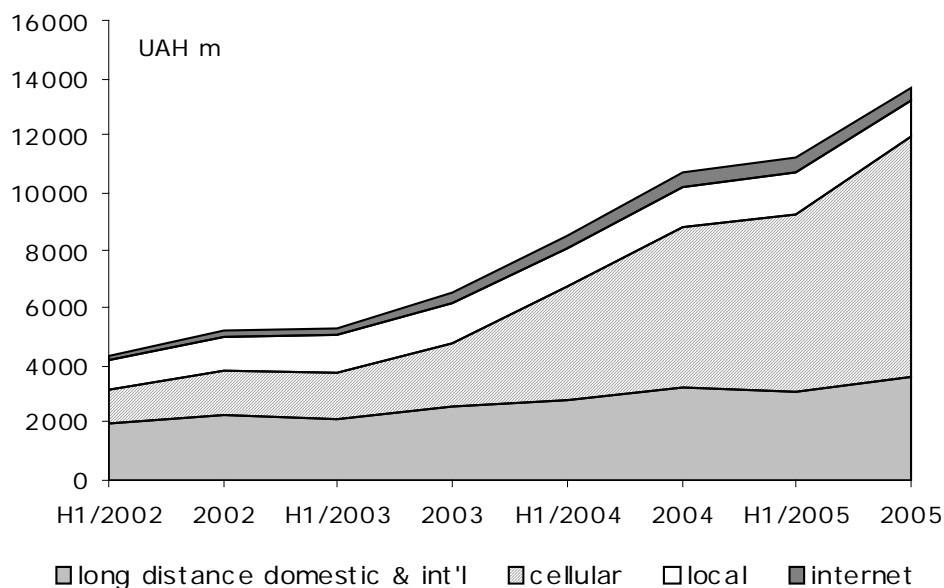
Table 1

The role of telecommunications and post sector in the economy

		2000	2001	2002	2003	2004
Output	UAH m	7,057	8,965	11,587	14,268	19,703
	% total output	1.6%	1.7%	2.0%	2.1%	2.2%
	% industrial output					5.8%
Value added	% GDP	3%	3%	4%	4%	3.6%
Value added	% output	62%	68%	69%	67%	63%
Structure of value added:						
Compensation of employees	% sector VA	39%	36%	36%	34%	29%
Gross operating surplus, mixed income	% sector VA	47%	56%	52%	56%	65%
Net taxes on production and imports	% sector VA	14%	8%	11%	11%	6%
Employment	thous people	256	256	255	252	254
	% total employed	1.9%	2.0%	2.1%	2.2%	2.3%
Average wage	UAH	317	402	469	548	710
Exports	UAH m	484	499	475	443	665
	% total exports	0.5%	0.4%	0.4%	0.3%	0.3%
	% sector output	6.9%	5.6%	4.1%	3.1%	3.4%
Imports	UAH m	539	542	533	421	558
	% total imports	0.6%	0.5%	0.5%	0.3%	0.3%
	% sector output	7.6%	6.0%	4.6%	3.0%	2.8%
Exports/imports	index	0.9	0.9	0.9	1.1	1.2

Source: State Statistics Committee, own calculations

Mobile and Internet communication are the most dynamic segments of the market that predominantly drive the growth in income of population (Figure 2). According to the State Statistics Committee, the amount of subscribers to these services has reached 33 m by March 2006, while the amount of the fixed line users equals only 12 m.

**Figure 2**Revenues³ in the telecommunications sector, in cumulative terms, UAH m

Source: State Statistics Committee of Ukraine

Ukrtelecom is the monopolist on the market of local and long-distance calls providers. After the merging of Ukrtelecom with Utel they jointly control around 90% of the local and international calls. Among the other fixed line providers are Optima, Farlep, Velton, but they occupy less than 10% of the fixed line market.

The mobile telecommunication market demonstrates rather tough competition with constantly growing number of subscribers. Among the key players are both domestic and foreign companies Kyivstar, UMC (with their respective virtual operators Djuce and Jeans), Life and others. Recently the new Russian mobile operator Beeline has entered the Ukrainian market. Currently the number of mobile subscribers is more than 30 m that is 70% of Ukrainian population. Internet market is also very intensively developing in Ukraine. Nevertheless, also pertaining the competitive features the range of services on this segment of the market remains rather limited and the quality of services also remains rather low.

3.1.1 Reforms between August 2005 and August 2006

Between August 2005 and July 2006 there were adopted around 50 legislative acts in the area of telecommunication, including regulations on marginal tariffs for the usage of electrical telecommunication services for monopolistic companies, and amended licensing procedures.

Most importantly, the Concept of the development of Telecommunication in Ukraine till 2010 has been approved.⁴ The Concept defines key directions

³ Revenues are provided including VAT and before taxes



for the development of the sector with the intention to allow for long-term planning and thereby to improve the competitiveness of the sector. The document re-establishes Ukrtelecom's position as monopoly supplier for domestic fixed-line services for the coming years, but imposes a tariff rebalancing in order to gradually approach cost-covering levels and decrease cross subsidization. That allowed us to increase the indicator "natural monopoly pricing" from 3.0 to 3.3.

Tariff rebalancing intensification will also require the government to approve the respective legislation on tariff setting. A first step was the approval of a new tariff plan in July 2006, which allows Ukrtelecom to increase local telecommunication tariffs in two stages by first 35% and then by another 15%. At the same time long-distance calls will become cheaper in order to reduce the level of cross subsidization. Overall, given the significant extent of additional political work that yet needs to be performed, it remains to be seen how important the Concept will be for determining future developments of Ukraine's telecommunication sector, especially with respect to improving service quality and competition in the sector.

In 2005 Ukrtelecom was merged with Utel, a long distance communication company that accounted for almost 100% of outgoing and 75% of ingoing traffic and 40% of all long-distance communication market in Ukraine, to create a vertically integrated telecommunication company. The objective of this major reorganization was to increase the value of Ukrtelecom prior to its privatization. The merger of Ukrtelecom with Utel was not contested by the AMC. Moreover, in May 2006 the Kyiv Economic Court excluded Ukrtelecom from the list of monopolistic companies in Ukraine, and the AMC agreed with such decision.

Also, Ukrtelecom received the first license for third generation (3-G) mobile telecom operations in Ukraine beyond competition. In spite of the intentions of other small operators to appeal to the Court that decision of the NCRC remained unchanged. This creates certain problems for the development of future competition on this segment of the market. At the same time, it is expected that the 3-G license alone might increase the potential privatization value of the company by USD 400-500 m.

The development of IP-telephony, which so far was blocked due to licensing problems, has been partially resolved when the National Commission for Regulation Telecommunication (NCRC), the recently created telecommunication regulator, issued first licenses. However, due to difficult and unclear licensing conditions it remains unclear whether this development will be sufficient to stimulate the development of IP telephony as a noteworthy substitute for fixed line services.

Except for this first success with IP-telephony licensing, the NCRC has so far no significant impact on the market, mainly due to ongoing organizational problems and highly non-transparent proceedings. Therefore, the "transparency" and "access pricing regulation method" indicators were only slightly improved to 2.7 and 2.3 levels respectively. Moreover, decisions of the NCRC remain highly politicized so that the Commission cannot be regarded as independent.

⁴ CMU Resolution "On the approval of the Concept of the Telecommunication Industry till 2010" No 316-p from June 7, 2006.



Taken all discussed above, the telecommunication sector indicator was improved from 2.4 to 2.5 levels mainly due to the improved natural monopoly pricing procedures and slightly improved transparency of regulation.

3.1.2 Needed future reforms

Privatization of Ukrtelecom has repeatedly been postponed and a law that defines the terms of privatization was blocked in Parliament. Until today, the decision process remains highly dependent upon political and economic interest groups, which undermines a sound, competition-driven development of the sector.

The service quality is in urgent need for improvements, not only for telecom but also for Internet services. This can best be achieved through more competition. However, policies so far are not enough aimed at this objective as they remain to be driven by interest groups.

3.2 Railways and transport

Transportation plays an important role in the service sectors of Ukraine as well as in the economy as a whole. It is the second most important sector in services after trade, ranging between 21-24% in services output over the last years. It is also accounting for 7% in total output in the economy. The distribution of value added is unstable. In 2000-2001 and 2004 the enterprises received most of value added as gross operating surplus, while in 2002 and 2003 most of the value added has been distributed to employees (47-50%). The lowest share (10-11%) is net taxes to the government.

The railways are the most important mean of transportation. It services 45-49% of total freight turnover, and 45% in total turnover of passengers.

Table 2
The role of the transport sector in the economy

		2000	2001	2002	2003	2004
Output	UAH m	28,771	35,520	38,353	49,155	59,554
	% total output	7%	7%	7%	7%	7%
	% services output	24	24	21	22	17
Value added	% GDP	10%	11%	10%	11%	10%
Value added	% output	62%	61%	59%	59%	58%
Structure of value added:						
Compensation of employees	% sector VA	37%	38%	50%	47%	39%
Gross operating surplus, mixed income	% sector VA	51%	47%	40%	44%	50%
Net taxes on production and imports	% sector VA	11%	16%	11%	10%	11%
Employment	thous people	850	791	759	742	719
	% total employed	6%	6%	6%	6%	6%
Average wage	UAH	338	479	607	731	890
Exports	UAH m	15,886	15,903	18,576	20,008	23,189



	% total exports	15%	14%	15%	13%	11%
	% sector output	55%	45%	48%	41%	39%
Imports	UAH m	3,400	2,196	3,469	4,805	11,226
	% total imports	3%	2%	3%	3%	6%
	% sector output	12%	6%	9%	10%	19%
Exports/imports	index	4.7	7.2	5.4	4.2	2.1

Source: State Statistics Committee, own calculations

State railways monopolize the railway transportation in Ukraine. Six regional railways are regulated by the State Railways Administration (Ukrzaliznytsia), which is integrated into the Ministry of Transport and Communications. Railways infrastructure, freight, and passenger operations are strongly integrated. The Ukrainian railways also incorporate ancillary services and quite an extensive social infrastructure. The profit of Ukrzaliznytsia (UZ) constituted UAH 1.8 bn in 2005.

3.2.1 Reforms between August 2005 and August 2006

During the studied period most changes in railways sector concerned tariff setting and governance of the Ukrainian railways.

The Ministry of Transport and Communications of Ukraine (MTCU) has separated the posts of First Deputy Minister and Director General of Ukrzaliznytsia (UZ), and appointed different persons for these posts. While this is a step in right direction towards separation of commercially and politically motivated activities, it was not supported by a respective decree or law and, therefore, cannot be considered as a sustainable development. Thus the indicator "operation of natural monopoly" remained the same 1.7.

According to the decision of the CMU, starting from May 2006 the MTCU has the power to set tariffs for freight transportation which then need to be approved by the Ministry of Economy and the Ministry of Finance. Before, tariff proposals of the MTCU were approved by the entire CMU. Accordingly, this decision appears to be a very small but still positive one because now only directly affected parts of the government are involved, which limits influence of traditionally populist ministries. However, in the absence of competition and independent regulation there remains the strong concern that tariffs will be set in the interests of the UZ in order to increase profits for financing projects of dubious economic value.

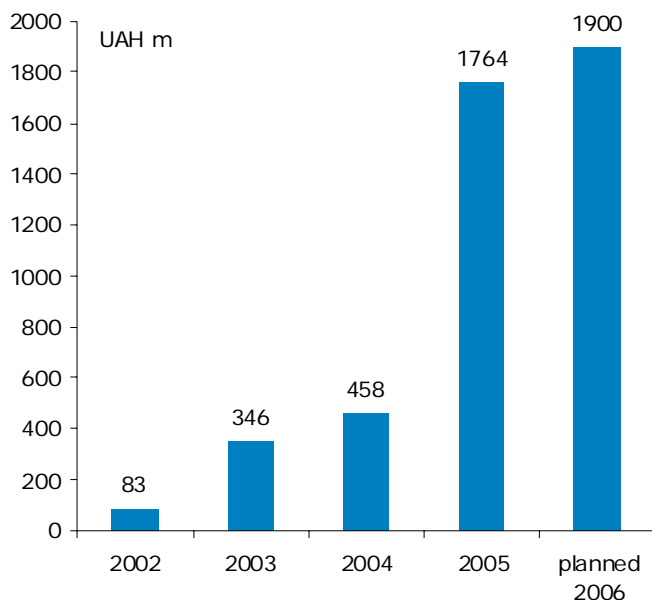
The level of cross-subsidization of passenger by freight transportation slightly reduced after a 50% increase in the price of domestic passenger tickets was introduced. The respective decree of the Ministry also foresees further increases in January, April and July 2007 by 10 % each. While this tariff increase moderately improved cost-coverage of railway passenger transportation, passenger transportation tariffs have remained below their costs. Improvement of tariffs cost effectiveness and reduction of the level of cross-subsidization allow us to increase indicators "political vs regulated operators" and "natural monopoly pricing" to 1.7 and 2.3 respectively. It is expected that in 2006 the losses of UZ from passenger transportation will account for more than UAH 3 bn, which is UAH 600 m higher than in 2005 mainly because of increase in input prices i.e. labour and energy costs. As it has happened almost each year, the state did not pay its obligations as for compensation for transportation of privileged groups of passengers in



full. For first quarter of 2006 the state compensated only UAH 19.7 m, which is 20% out of the total compensation billed. As of September 1, the debt of the state constituted UAH 162 m.

Figure 3

Profit of Ukrzaliznytsia, UAH m



Source: Ministry of Transport and Communications

In spite of the losses from passenger transportation, net profit of UZ significantly increased in 2005, mainly due to a rise in freight transportation tariffs in 2005⁵ and expenditure cuts.

The CMU has also approved the financial plan for UZ for 2006, which envisages 7% growth in the enterprise's net profit. The plan was reconsidered several times, mainly because of disagreement between the Ministry of Finance and the UZ. As a result, expenditures were considerably cut in the last version, mostly expenditures for social support programs of UZ's employees.

The MTCU has drafted a new railway freight transportation tariffs list. The new tariffs will comply with WTO requirement, in particular the requirement that transportation tariffs for exports, imports and domestic deliveries are equal.

Summing up, overall indicator for railways sector grew slightly from 1.78 to 1.80 mostly due to changes in tariff policy.

⁵ See Anna Chukhai, Ferdinand Pavel, Ivan Poltavets, Oleg Sheremet, Infrastructure Monitoring for Ukraine No 7, August 2005 (http://ier.org.ua/imu/imu_7_en.pdf)



3.2.2 Needed future reforms

The MTCU and the UZ repeatedly announced plans to corporatize the UZ, which is foreseen for the summer of 2007. By then, the UZ should be transformed into a Joint Stock Company, 100% of shares of which will belong to the state. The implementation of these plans remains to be seen.

However, more ambitious reforms have to be put on the agenda. First, an independent commission should supervise tariff setting in order to balance the interests of all stakeholders. The tariff-setting procedure has to become predictable and economically justified, which will not only guarantee high-enough tariffs for sustainable performance and growth of Ukrzaliznytsia, but should also stop the tendency to use tariffs as an easy means of attracting financial resources. Finally, an agenda to stimulate competition in the railway sector, in particular in freight transportation, has to be developed. In this respect, the first necessary steps would be licensing of new entrants and guarantees for access to the railway tracks, which should also be ensured by the independent regulatory commission.

3.3 Roads

The maintenance and construction of roads in Ukraine is provided by publicly owned JSC "Avtomobilni dorogy Ukrainy", which currently incorporates 31 affiliated enterprises and 6 enterprises of special purpose. A government department – State Agency Ukrautodor – manages "Avtomobilni dorogy Ukrainy". Road network extensions and regulation are also the responsibility of Ukrautodor.

3.3.1 Reforms between August 2005 and August 2006

In August 2005 - August 2006 the government devoted a special attention to the financing of maintenance, reconstruction, and construction of roads that are the parts of transnational corridors. The government also sketched reforms that envisage adaptation of the Ukrainian standards of roads and their infrastructure for the standards of the European Union. The government is currently designing legislative base that should enable use of public-private partnership in Ukraine. Furthermore, the government is also planning sector restructuring that envisage improvement in management, the effectiveness of regulatory environment, and the financial state of the sector.

During August 2005-July 2006 two major programs that define future sector development were approved:

- 3 The State Program of Development of Car Roads of General Purpose for 2005-2010, and
- 4 The State Program of Development of International Transport Corridors for 2006-2010.

The State Program of Development of Car Roads of General Purpose for 2005-2010 was approved on August 3, 2005. The program defines the major directions of road sector development and its management. The document explicitly states the amount, sources, and directions of



financing, which is necessary for the implementation of the sector development strategies including those that are already defined in the other legislative documents. The program envisages that for 2005-2010 nearly UAH 50.9 bn should be spent for construction and maintenance of roads. The Central and local budgets should contribute about UAH 37 bn for these 5 years. The rest of funds should come from loans granted by international financial organizations and concessionaire. The volume of expenditures for financing road sector in 2006 is in line with financing schedule set by the program. This was achieved by earmarking 100% of excises and import duties for oil products and vehicles and tires to the sector financing. These developments allowed us to increase the indicator of "state indebtedness" and "natural monopoly pricing" from 1.7 to 2.0.

Table 3

Central fiscal financing of roads maintenance and construction (UAH bn)

	2000	2002	2004	2005	2006
Draft budget	0.5	0.6	1.6	2.9	4.7
Approved budget	0.5	0.7	2.2	3.1	4.6
Executed	0.6	1.0	5.3	3.6	n/a
Executed % of GDP	0.4	0.4	1.5	0.8	0.9*

Source: Laws and draft laws on state budget, Treasury reports on Central budget execution

Note: *for the year 2006 expected number is inserted

The Program of Development of International Transport Corridors for 2006-2010 was approved in April 2006. The program envisages the development of national network of international transport corridors and improvement of technologies of international transportations. It also defines the adaptation of Ukrainian standards to the standards of European Union. In particular, new standards are to be developed for roads construction, roads infrastructure, and use of traffic signs. Furthermore, the program envisages simplification of custom procedures. The worth of the program is UAH 15.8 bn. Nearly UAH 3 bn of these funds are to be provided from the Central budget and the rest from the private investors.

The government already works over the directions outlined in the programs. For instance, prices for international permissions has decreased, the terms of custom control procedure was shortened, the procedure of licence issue for provision of transport services was simplified. Thus, the indicator of "access regulation" was increased from 2.7 to 3.0.

In general, medium term financing and development plans are an important precondition for sector policies effectiveness. Accordingly, both programs are likely to play an important role in the future development of Ukraine's road infrastructure. Both programs also foresee the attraction of significant private funds to finance investment plans. Specifically, the government is planning to implement significant public-private partnership (PPP) projects including toll roads from Kyiv to Vinnytsia and from Kharkiv to Simferopol and Sevastopil, as well as a road from Kharkiv to the border of Russia. However, given Ukraine's previous experiences with different types of PPPs, the successful implementation of the programs remains questionable as long as the country lacks a sound legislative basis and commercially oriented priorities for privately financed infrastructure projects.



Taking all changes into account, the aggregate indicator for road development was increased from 2.29 to 2.37. ...

3.3.2 Needed future reforms

Since the problem of under-financed road development is still a pressing issue while public funds are scarce, the government should focus on exploring options for private financing of road construction and operation. To achieve this objective, the government should develop a sound legislative basis for concessions and other forms of public private partnership. Here, a law on public-private partnership, which currently is being drafted, is expected to improve the situation.

The efficiency of roads maintenance and construction should be improved. For this purpose, regulatory and management functions in the road sector have to be separated. As a result of the reform, the role of "Ukravtodor" should change. In particular, "Ukravtodor" responsibility should be limited to provision of R&D, expertise, and control over roads use. The functions of roads use and construction are to be transferred to the enterprises (including commercial) of the sector on a tender base.

Finally, the process of corporatization of all public enterprises in the road sector should be intensified.

3.4 Power

Although power sector is very important for the functioning of the economy, its share in production has been steadily declining with growth of other sectors. In 2000-2004 the share of the sector's output in total output declined from 4.2% to 2.5%, in industrial output – from 7.9% to 4.8%. The structure of value added changed in 2003. Until that year the most of value added was distributed as a gross operating surplus of enterprises (73%-65%). In 2004 most of the value added has been distributed to employees as salaries (56%). The lowest share of value added is received by the state as net taxes. The power sector is a net exporter, with the share of exports at 2-3% of total output.

Table 4
The role of the power sector in the economy

		2000	2001	2002	2003	2004
Output	UAH m	18,333	19,557	19,764	20,561	22,703
	% total output	4.2%	3.7%	3.5%	3.0%	2.5%
	% industrial output	7.9%	7.1%	6.6%	5.6%	4.8%
Value added	% GDP	5.2%	4.6%	4.2%	3.6%	3.1%
Value added	% output	48%	48%	48%	47%	48%
Structure of value added:						
Compensation of employees	% sector VA	21%	26%	33%	35%	56%
Gross operating surplus, mixed income	% sector VA	73%	72%	65%	65%	36%



Net taxes on production and imports	% sector VA	6%	2%	2%	0%	8%
Employment*	thous people	521	526	528	529	533
	% total employed	3.8%	4.1%	4.3%	4.5%	4.8%
Average wage*	UAH	371	476	562	651	767
Exports	UAH m	529	389	387	608	639
	% total exports	0.5%	0.3%	0.3%	0.4%	0.3%
	% sector output	2.9%	2.0%	2.0%	3.0%	2.8%
Imports	UAH m	11	16	15	14	2
	% total imports	0.0%	0.0%	0.0%	0.0%	0.0%
	% sector output	0.1%	0.1%	0.1%	0.1%	0.0%
Exports/imports	index	48.1	24.3	25.8	43.4	319.5

Source: State Statistics Committee, own calculations

The state owns the majority stakes in all except one generating companies. These stakes are controlled by the state JSC "Energy Company of Ukraine", with the exception of stakes in the four nuclear power plants, which are controlled by a state company EnergoAtom. Most electricity consumers including households are supplied by regionally separated distribution companies (Oblenergos) at regulated tariffs, but industrial consumers are free to choose alternative suppliers that provide electricity under unregulated tariffs. The market share of independent suppliers has more than doubled over recent years, from about 6% in 2002 to 14% by the end of 2004.⁶

3.4.1 Reforms between August 2005 and August 2006

There were some changes in power sector's regulation and operation during the period under discussion. The main changes were observed in tariff setting, which were driven by external energy price shock.

Responding to the energy price shock – 60% increase of price for imported gas from the beginning of 2006 – the regulatory authority NERC approved an increase of electricity tariffs for households. From May 2006, tariffs were increased by 25% in order to improve cost effectiveness. Despite this increase, tariffs for households are still 44%⁷ below the costs of power generation and distribution. The NERC intends to adjust the tariffs to cost-covering level and to eliminate cross-subsidization in the industry⁸. Its tariff adjustments plan foresees 25% increase of the tariffs each half a year from September 2006 till April 2008. This implies an increase of household tariffs to UAH 0.476 per kWh⁹ (USD 0.094), which is about 40% above the presently cost-covering tariff level as reported by the NERC. The schedule for price increase mirrors expected future price increases in imported gas and thus more appropriately reflects long-term marginal costs of power supply. As general cost effectiveness of tariffs has

⁶ More details about Ukraine's electricity sector can be found in IER/GAG "Advisory paper V8, EU Energy Sector Reforms: A benchmark for Ukraine!"

⁷ According to the NERC the cost effective tariff for households is currently equal to UAH 0.3425 per kWh (USD 0.07).

⁸ In response to an order of the CMU No 733, May 24, 2006

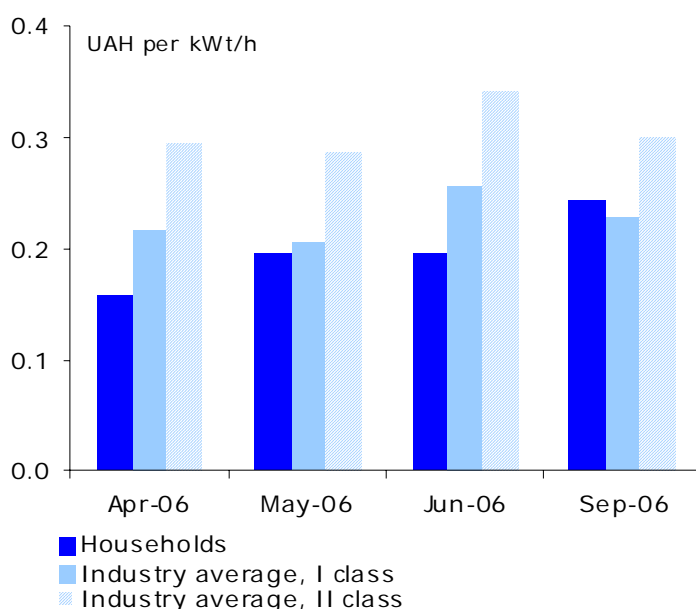
⁹ $0.195 \cdot (1.25)^4 = 0.476$.



improved, the indicator “political vs regulated operators” was increased to 3.3.

From August 2005 till April 2006 tariffs for industrial consumers were raised by 19% on average mostly due to wholesale price rise (above 30%) and as a result of implementation of the last year CMU order resolution “On gradual equalizing of tariffs”¹⁰ across the regions of Ukraine¹¹. Despite earlier announcements of the NERC that tariffs in some regions would decrease after implementation of the resolution, the tariffs were increased Ukraine-wide mainly due to the gas price increase in 2006. As was discussed in the previous issue of the IMU, this initiative in fact introduced cross-subsidization between regions, which goes against cost-reflective logic, and also is also likely to diminish incentives for cost reduction and energy savings.

Figure 4
Electricity tariffs for different consumer group



Source: Energobusiness, own calculations

Note: 1 class consumers: consumers that receive energy of voltage higher than 27.5 kW or use more than 150 m kWh a month;

2 class: consumers that receive energy of voltage less than 27.5 kW.

The discussions regarding this resolution continues, provoked by numerous complains of industrial consumers. Responding to the dispraises the NERC introduced a 10% discount to unified electricity tariffs for large power consumers, which consumes more than 50 m kWh of electricity starting from September 2006. The list of those large enterprises consists of 23 companies. This decision however does not solve the problem of regional cross-subsidization and economically unjustifiable logic of tariff setting,

¹⁰ CMU' order No 745, NERC regulation

¹¹ See Anna Chukhai, Ferdinand Pavel, Ivan Poltavets, Oleg Sheremet, Infrastructure Monitoring for Ukraine No 7, August 2005 (http://ier.org.ua/imu/imu_7_en.pdf) for details



while in addition can provoke misuse of power and corruption adding or excluding an enterprise to or from the list.

In the first half of the year 2006 a slight worsening of payment discipline was observed, which can mainly be explained by rising electricity tariffs. Total debts of consumers for electricity have raised by 4.2% and as of July 1 constituted slightly above UAH 12 bn. The largest debtors remain to be public utility and coal mining enterprises. In response to increasing debts the NERC is going to introduce 'a discrete supply of power' that means supply the amount of electricity that corresponds to actual level of payments.

The situation with intra-industry payments did not change considerably. In the first half a year 2006 members of wholesale electricity market made only UAH 237.7 m out of planned UAH 5-6 bn of payments according to the scheme approved by the law "On measures to guarantee stable functioning of enterprises within the fuel and energy complex"¹². Total indebtedness among consumers of power, power generators, power distributors, and wholesale market accounts for almost UAH 18 bn. The implementation period of the law might be prolonged till the end of 2006, while before it should be ended till August 2006.

Table 5

Electricity consumption by group of consumer

	Jan-Jun 2006, m Kwt/h	Growth yoy, %	Share in total, %
Total consumption	72261.9	3.7	100
Industry	39243.3	0.0	54.3
metallurgical	20658.0	-0.6	28.6
fuel	5133.9	-1.0	7.1
chemical and oil refinement	3668.5	-3.2	5.1
machine-building	3549.1	-0.5	4.9
food processing	2067.6	7.1	2.9
construction materials	1382.7	10.3	1.9
other	2783.5	2.3	3.9
Agriculture	1743.0	3.4	2.4
Transport	4873.6	4.1	6.7
Construction	562.2	13.0	0.8
Utilities	8469.6	7.5	11.7
other-non-industrial consumers	2627.6	8.6	3.6
Households	14742.6	10.8	20.4

Source: Energobusiness

The CMU has approved the Energy Strategy of Ukraine till 2030. The document does not introduce the principles of development of energy sector in market economy, only describing technical parameters of the sector that should be achieved. Also, the strategy does not contain description of policy instruments to achieve the ambitious goals. However, the fact of its adoption signals of the beginning of public discussion on Ukraine's energy sector development.

¹² No 2711-IV, June 23, 2005.



In the end of 2005 a Memorandum of Understanding on cooperation in the field of energy between the European Union and Ukraine was signed, in which Ukraine stated intention to harmonize its energy policy with EU standards. This means that Ukraine's market, in particular the wholesale electricity market, will take some steps towards adapting the EU energy directives on market opening and third party access to networks, which will allow the market to benefit from efficiency gains from more competition.

To sum up, the indicator for the power sector remained unchanged at 2.56 in spite of some improvements in tariff structure.

3.4.2 Needed future reforms

The most urgently needed reform step is support for clear measures against a further widening of the payment problems. This includes tariff reform, reduction of cross-subsidization and a comprehensive strategy for developing the sector, including a clear commitment towards privatisation. So far, organizational inertia and the lack of competition, coupled with centralising tendencies, may lead to a less efficient use of available resources. In case the government chooses to go forward with introducing private initiative in the sector the gains will be larger. However, for private interests to bring benefits to the sector the regulatory framework should be strengthened allowing for competition and incentives for investments.

3.5 Gas

Gas sector is one of the strategic sectors in the economy of Ukraine. The share of natural gas in primary energy consumption is close to 50%. Ukraine possesses noticeable natural gas resources and well-developed gas transport infrastructure. However, small volumes of domestically extracted gas and high rate of energy inefficiency makes Ukraine heavily dependent on energy imports.

Ukrainian gas market is dominated by state-owned NJSC Naftogaz, which is a vertically integrated oils and gas company responsible for exploration and production, transportation, marketing, and storage of gas. Several government bodies regulate Naftogaz, including the Ministry of Fuel and Energy, the Ministry of Economy, the Natural Resources Committee, and the NCER, which is in charge of setting prices and tariffs. The transit of gas is regulated by intergovernmental agreements that also define the minimum volumes, costs, and the general terms of gas transit. During recent times, the role of other companies is increasing. In particular, in the gas sales the market share of UkrGasEnerg, which is 50% owned by Naftogaz, covers industrial consumers and some utility enterprises. Furthermore, volumes of gas extracted by independent gas producers are growing. The independent gas producers such as Cardinal Resources and Regal Petroleum sell their natural gas production to industrial consumers through the joint ventures and joint activity agreements.

Table 6
Role of the gas supply sector in the economy

	2000	2001	2002	2003	2004
Output	UAH m 2,075	2,367	2,439	2,112	2,129



	% total output	0.5	0.5	0.4	0.3	0.2
	% industrial output	0.9	0.9	0.8	0.6	0.4
Value added	% GDP	0.5	0.5	0.6	0.4	0.3
Value added/output	%	39.7	42.9	52.7	53.8	52.1
Structure of value added:						
Compensation of employees	% sector VA	54	58	56	68	75
Gross operating surplus, mixed income	% sector VA	36	35	16	2	1
Net taxes on production and imports	% sector VA	9	7	28	30	24
Employment*	thous people	521	526	528	529	533
	% total employed	3.8	4.1	4.3	4.5	4.8
Average wage*	UAH	371	476	562	651	767

Source: State Statistics Committee, IER estimates

The indicators that characterize gas supply sector are presented in Table 6. During 2000-2004, the weights of sector's output in total and industrial outputs reduced nearly twice to 0.2% and 0.4% respectively. The share of the value added declined from 0.5% of total value added in 2000 to 0.3% in 2004. At the same time, ratio of value added to output in the sector increased during 2000-2004 from 39.7% to 52.1%, indicating the improvement of the efficiency in the sector. The change in the structure of value added that included sharp reduction of gross operating surplus and mixed income (from 36% to 1%), nearly double increase in taxes (up to 24%), increase in the labour compensation (from 54% to 75%) was accompanied by increasing wage levels, reluctance of the government to revise tariffs, and elimination of VAT privileges.

3.5.1 Reforms between August 2005 and August 2006

Following the trend of increasing gas prices on EU markets and also provoked by political reasoning, Russia and Ukraine had signed new gas agreement on 4th January 2006. This Ukrainian-Russian gas agreement eventually set higher prices for gas imports from Russia and Caspian Sea States, and it also defined new conditions for gas import and transit of gas through the territory of Ukraine.

The external shock has motivated the Ukrainian government to increase the tariffs for all groups of gas consumers and implement measures for strengthening payment procedure, favouring the implementation of energy saving technologies, and facilitating the development of domestic gas exploration and extraction. However, still little attention was paid to the commercialisation, organisation of the sector, budget financing of subsidies, regulatory and institutional development. The sector continues to be characterised by high non-transparency and lack of competition.



Agreement

The newly signed agreement implied new conditions of gas import and gas transit through Ukraine. The major conditions of gas supply include increases in import prices, increases in transit and storage fees, as well as the market entry of a new gas trader on the Ukrainian wholesale market.

According to the agreement, starting from the beginning of 2006, gas transit through Ukraine has to be paid in cash rather than through barter schemes. The level of transit fees was increased from USD 1.09 to USD 1.6 per thousand cubic meters (tcm) per 100 km. Furthermore the usage tariffs for Ukrainian gas storage facilities were increased. These measures are generally positive since cash payments should increase transparency of transactions, and higher payments should help to improve the state of infrastructure.

Then, as defined in the agreement, an intermediary (RosUkrEnerg, RUE) possesses a unique right to supply gas imports from Russia and Caspian states to Ukraine. Russian gas is priced at USD 230 per tcm, Caspian gas at lower levels so that the average price charged on the Ukrainian wholesale market is USD 95 per tcm. In addition, the RUE receives gas supplies for own exports through Ukraine's import contracts with Russia and Caspian States.

The agreement also requires Naftogaz and the RUE to set up a joint gas supply company "UkrGasEnerg" (UGE) that sells the imported gas on the Ukrainian wholesale market. As a part of the overall gas agreement, the UGE initially intended to sell all imported gas (about 32 bcm) on Ukraine's wholesale market. However, the Antimonopoly Committee of Ukraine refused to issue a license for this amount stating that UGE would then exceed the critical threshold of 35% of market sales. Instead, the UGE was only offered a license for up to 5 bcm. Recently the UGE has appealed to courts insisting to increase its licensed quantity.

The impact of the presence of a second large trader on the market is intensively discussed. On the one hand, this could be seen as a start of competition and a shift towards market liberalization. On the other hand, the UGE may simply replace Gaz Ukrainy as dominant player on the market.

Tariffs

Untill 2005 Naftogaz subsidised the economy by supplying gas at tariffs below costs and by tolerating non-payments of final consumers (see Table 7). This contributed to the high rate of infrastructure depreciation and high loans of Naftogaz.¹³

¹³ According to different estimates, the loans of "Naftogaz" has reached up to USD 1bn-USD 3.5bn. Substantial part of these loans was aimed to cover operational expenditures of Naftogaz, e.g. payment of taxes to the budget.

**Table 7**Implicit subsidies¹⁴ provided to some consumers by gas sector

	2001	2002	2003	2004	2005	2006*
Under-pricing for budget entities, population, public utilities						
UAH bn	3.9	4.8	5.9	5.1	5.4	6.0
% of GDP	1.9%	2.1%	2.2%	1.5%	1.3%	3.0%
Payment arrears						
UAH m	1.1	1.0	0.9	0.6	0.2	1.0
% of GDP	0.5%	0.5%	0.3%	0.2%	0.1%	0.5%

Source: Energobusiness, own calculations

Note: *the data is presented for 6 months.

In response to the more than doubled imported gas price for Ukraine, the government has started a path of multi-stage adjustment of tariffs for all groups of consumers for gas and use of gas redistribution infrastructure within Ukraine (see Table 8).

Table 8

Tariffs for gas consumers in Ukraine, UAH/tcm

	Till 01.05 2006	20.02 2006	01.05 2006	01.07 2006	Economically justified level*
Households	185	185	231	414	424
Budget entities	288	288	360	648	738
District heating	305	305	383	686	713
Industry	422	548	548	548	715

Source: The resolutions of Cabinet of Ministers of Ukraine, "Energobusiness"

Note: * Estimate of Ministry of Fuel and Energy.

Note: * Estimate of Ministry of Fuel and Energy.

According to the schedule, the tariffs should reach the officially estimated production costs till the end of the year 2006. Accordingly, the officially proposed structure of tariffs appears to be biased, given that "economically justified" tariffs for population remain below those for large consumers (Table 8). At the same time, currently the government has capped the maximum gas price sold in Ukraine by UAH 548 in an attempt to "protect" industrial consumers from too rapid price hikes. The increase in the tariffs caused significant social resistance. In response to the accumulation of arrears of Naftogaz and the lag in tariff increase we have decreased the indicator "intra-industry payment ratios" from 3.3 to 3.0.

Payment discipline

The average revenue collection rate declined from 96% in January-June 2005 to 89% for the same period of 2006. The decline in payments was particularly noticeable for district heating industry. Here, the level of

¹⁴ By implicit subsidies here, we mean under-pricing and payment arrears. The benchmark price for gas is calculated as a price for imported Turkmen gas at the border of Ukraine for 2001-2005 and USD 95 for 2006. Thus, the actual subsidies could be even higher since we do not take into account long-term costs.



payment for gas in January-June 2006 was 14 percentage points less than for the same period of 2005 and constituted 63%. This was the major factor that allowed us to decrease the indicator "final consumers collection rate" from 3.3 to 3.0. This deterioration was mainly caused by lag in the increase in the end-user tariffs for district heating¹⁵. By the end of 2006, the situation can become worse as budget 2006 does not envisage higher compensation for subsidies and privileges provided to households by utility enterprises.¹⁶

The worsening of payment discipline threatens to strongly undermine the sector performance. Thus, the government has undertaken a set of measures with the aim to strengthen payment discipline. For this purpose, a debt restructuring scheme for enterprises of fuel and energy complex was presented by the Ministry of Fuel and Energy, the conditions of renovation of gas supply contracts became more strict and envisaged pre-payment and guarantee requirements. Gas Ukrainy has approved a new procedure of work with district heating sector. The procedure introduces requirement of a guarantee of 100% payment for arrears till October 1, 2006. Furthermore, the Naftogaz started to invest in metering equipment (the overall size of the program is UAH 150 m and it should help to install about 400 thousand gas meters) and energy saving technologies.¹⁷

Domestic gas extraction

The tough situation in the gas market has pushed the government to undertake measures for attracting investments for domestic gas extraction. The government has decided to concentrate state investment resources on domestic projects and also intensified open tenders for the right for exploration and development of gas and oil fields. Permissions for gas extraction in the Prikerchenskiy region were sold to a private US-based company. Naftogaz also assigned an agreement on joint activity on gas extraction with Shell Ukraine. However, there remain significant obstacles to the further development of Ukraine's own gas reserves, including restrictions of gas export, problems for access to the gas infrastructure and unstable and non-transparent taxation of gas extraction.

Taking into account all changes, the overall index for gas sector was reduced from 2.06 to 2.04.

3.5.2 Needed future reforms

Structural reforms in the gas sector have been postponed for years. However, the external shock has already motivated Ukrainian government to start some reforms and discuss the future of the gas sector of Ukraine. The government has assigned the Ministry of Fuel and Energy to develop the concept of gas market reform and liberalization.

Currently, the government is discussing reforms in the gas sector. The objectives to improve the state of gas sector enterprises and infrastructure and decrease energy dependency were defined by the Energy Strategy of

¹⁵ The tariffs for district heating services provided to household are set on the regional level, only in some regions the district heating tariffs were raised.

¹⁶ Currently, nearly all subsidies and privileges are provided via compensation transfer to utility enterprises.

¹⁷ NERC suggests that the price of gas meters was already included into the tariff.



Ukraine till 2030. However, the strategy does not specify explicit ways of how to achieve these goals. Nevertheless, the strategy calls for an additional law "On foundations of Ukrainian gas market functioning". This document should define the systems of price formation and licensing of gas supply and it should regulate requirements necessary for the creation of stable competitive gas market and effective use of gas transport infrastructure.

While conducting reforms we suggest the government to stick to the recommendations we have presented earlier in our publications.¹⁸ In short, the government should foster competition in the sector and attract private capital while concentrating on the following:

- 3 Continue the tariffs increase to the cost-effective level;
- 4 Refuse provision of gas to population at low tariffs. Instead, provide targeted aid to poor households;
- 5 Disaggregate "Naftogaz" business into extraction, transport, and supply;
- 6 Ensure non-discriminatory access to gas infrastructure;
- 7 Ensure transparent and stable tax regime in the sector, reduce export restrictions with the time;
- 8 Facilitate involvement of private capital via different forms of public-private partnership;

3.6 Water and wastewater

The shares in output and value added of sector of water supply and wastewater treatment do not exceed 1%. Moreover, from 2000 to 2002 the output of the sector had been declining. Since 2001 the most value added in the sector is distributed as compensation to employees, while the share of gross operating surplus in the sector reduced. The services of the sector are not traded internationally.

Table 9

The role of the sector in the economy

		2000	2001	2002	2003	2004
Output	UAH m	2,803	2,240	2,178	2,320	2,451
	% total output	0.6%	0.4%	0.4%	0.3%	0.3%
	% industrial output	1.2%	0.8%	0.7%	0.6%	0.5%
Value added	% GDP	1.0%	0.0%	0.0%	0.0%	0.3%
Value added/output	%	39%	37%	37%	38%	38%
Structure of value added:						
Compensation of employees	% sector VA	41%	58%	60%	76%	76%
Gross operating surplus, mixed income	% sector VA	43%	25%	14%	5%	7%

¹⁸ More comprehensively the reforms are described in the publication IER/GAG (2006) "New Challenges for Economic Policy in Ukraine: Proposals for Immediate Actions", Kyiv



Net taxes on production and imports	% sector VA	16%	17%	26%	19%	17%
Employment*	thous people	521	526	528	529	533
	% total employed	3.8%	4.1%	4.3%	4.5%	4.8%
Average wage*	UAH	371	476	562	651	767

Source: State Statistics Committee, own calculations

Note: *Data for electricity, gas, and water supply

3.6.1 Reforms between August 2005 and August 2006

Reforms in the sector of water supply and wastewater treatment were not very intensive during the period under consideration. Due to several breakdowns in district heating networks of some towns in the beginning of 2006 the special attention was attracted to the utility sector in general. The government was forced to begin public discussions on the issue and prepared the plan of urgent measures on reform and development of the sector. However, concrete steps aimed at conceptual reconsidering the principles of the sector performance were not still undertaken.

The government has approved an action plan of primary steps in reform of public utilities. The plan foresees several direction of the reform. First, it is planned to stimulate competitive environment in the sector through different schemes of private sector involvement into the management and operations of the enterprises. In particular, it is planned to sign management, lease and concessions contracts with private companies. Next, tariff policy is planned to be improved by giving the power to set tariffs to independent regulatory institutions. Then, to stimulate technical re-equipment the Ministry is going to establish a Borrowing Fund, which will provide loans to public utility enterprises. The state will support such loans by compensating a part of interest payments, guaranteeing the loans and taking part in investment projects. State support will be conditional on adequate tariffs and improved performance of enterprises. Finally, the Ministry plans to change is a social support policy in the sector. It is planned to reduce a maximum share of utility expenditures in household income in order for household to be eligible for privilege in utility payments from 20% to 15%. Besides, it is proposed to introduce a possibility for consumers to choose between privilege in payment and monetary compensation. In general, these steps are in right direction. However, it is unclear how firms will be stimulated to improve their performance. Moreover, under current conditions of budget deficit, the capacity of governments – both central and locals – to take part in investment projects is highly uncertain. The success of the plan is still depend on its implementation and remains to be seen.

Table 10

Average expenditures on utility services of household by income group, UAH

Households income	Total expenditures	Utility expenditures	Including privileges and subsidies	Subsidies in total expenditures, %	Utility expenditures in total, %
			2002		
Below subsistence minimum	555	63	12	2	10.7



Others	1,024	91	14	1	8.8
			2003		
Below subsistence minimum	594	67	9	1	11.3
Others	1,069	98	11	1	9.2
			2004		
Below subsistence minimum	695	74	8	1	11.3
Others	1,186	105	9	1	8.9

Source: own calculations based on the household survey conducted by the State Statistics Committee for years 2002, 2003, and 2004.

Note: "Others" include households whose per capita conditional income exceeds subsistence minimum.

The government continues to provide extensive privileges to consumers in payments for utility services. However, recently it announced about the plans to reconsider and normalize the system. As it can be seen from the Table 10 non-poor households (in the table - "Others" - households whose per capita conditional income exceeds subsistence minimum) receives amount of subsidies comparable to amount received by poor households. This demonstrates inefficiency of current system of privileges in public utilities.

The CMU has formulated common tariff setting principles for water supply and wastewater treatment. According to the procedure, the tariffs should be set on the basis of a yearly financial plan. The tariffs calculation will also consider forecasted producer price index, which could protect utility provider from input price rises and collecting adequate revenues to pay for these inputs. In addition to other normative acts the procedure insists on setting tariffs at cost levels. This should improve cost effectiveness in the industry, which in fact for many years was one of the main reasons of industry stagnation. However, it remains to be seen how this new procedure will be implemented and enforced. We will not change the respective indicator until the results of the implementation of the procedure realize.

In 2006 the Ministry of finance transferred UAH 379 m to local budgets in order to pay debts for compensation of the difference between costs of the services and tariffs that have been accumulated during recent years. This of course will moderately improve financial position of the enterprises. However, this was done against the Law On utility services, which define that such compensation is in fact a responsibility of local power which set the tariff below the cost level. Thus, economic incentives for local policy makers to set cost-covering tariffs were seriously deteriorated.

In the end, the indicator for the Water and wastewater sector has not been changed.

3.6.2 Needed future reforms

All the problems of the sector of water supply and wastewater treatment have remained the same. They continue to need adequate cure. In particular, the sector needs a coherent efficiency-oriented strategy of



development directed mainly on promoting competition in the industry. Regulating the network industries in the sector of public utilities should be left to a separate governmental body, which should use specific approaches to regulation such as a yardstick competition between regional monopolies, a price-cap regulation for tariffs, and attracting private investment (focusing on energy-saving investments) through PPP schemes.



Appendices

Appendix 1. Infrastructure Indicator evaluation

	Indicator	Telecom								Railways								Roads												
		00-N	01-M	01-N	02-M	02-N	03-M	04-J	05-J	06-J	00-N	01-M	01-N	02-M	02-N	03-M	04-J	05-J	06-J	00-N	01-M	01-N	02-M	02-N	03-M	04-J	05-J	06-J		
	EBRD indicator	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
	IERPC indicator	2.31	2.36	2.24	2.22	2.26	2.29	2.41	2.40	2.50	1.29	1.39	1.49	1.54	1.56	1.79	1.73	1.78	1.80	2.16	2.19	2.19	2.21	2.32	2.30	2.29	2.37			
1.0	Commercialization and privatization	2.0	2.0	1.9	1.9	2.0	2.1	2.1	2.1	2.1	1.3	1.4	1.5	1.5	1.6	1.8	1.8	1.8	1.8	2.0	2.0	2.0	2.1	2.2	2.3	2.3	2.3	2.3		
1.1	Ownership	2.0	2.0	2.0	2.0	2.1	2.2	2.1	2.1	2.2	1.2	1.3	1.3	1.3	1.5	1.7	1.6	1.6	1.6	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1		
1.1.1	Natural monopoly	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
1.1.2	Potentially competitive businesses	2.7	2.7	2.3	2.3	2.7	3.0	2.7	3.0	2.7	1.3	1.3	1.3	1.3	1.7	2.0	2.0	2.0	2.0	2.7	2.7	2.7	2.7	2.7	2.7	3.0	3.0	3.0	3.0	
1.1.3	Ancillary businesses	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.7	1.7	1.7	2.0	1.7	1.7	1.7	1.7	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	
1.2	Operation	1.8	1.9	1.7	1.7	1.7	1.8	2.0	2.0	2.0	1.2	1.4	1.6	1.7	1.7	1.8	1.9	1.9	1.9	1.6	1.8	1.8	1.9	2.0	2.2	2.1	2.1	2.1		
1.2.1	Natural monopoly	1.7	2.0	1.7	1.7	1.7	1.7	2.0	2.0	2.0	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.3	1.7	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
1.2.2	Natural monopoly planning and investment	2.0	2.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.0	1.3	1.3	1.7	1.7	2.0	2.3	2.3	2.3	1.7	1.7	1.7	1.7	1.7	2.0	2.3	3.0	3.0	3.0	
1.2.3	Private sector participation in service	1.7	1.7	1.7	1.7	1.7	2.0	2.3	2.3	2.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.0	2.3	2.3	2.3	2.3	
1.3	Organizational structure	2.2	2.2	2.1	2.1	2.1	2.2	2.2	2.1	2.1	1.4	1.6	1.6	1.6	1.7	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.5	2.6	2.6	2.6	2.6	2.6		
1.3.1	Separation of natural monopoly and potentially competitive businesses	2.3	2.3	2.0	2.0	2.0	2.3	2.3	2.3	2.0	1.0	1.0	1.0	1.0	1.3	1.7	1.7	1.7	1.7	1.0	1.0	1.0	1.3	1.7	1.7	1.7	1.7	1.7	1.7	
1.3.2	Separation of ancillary businesses	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
1.3.3	Decentralization	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.3	1.3	1.3	1.3	1.7	2.0	2.0	2.0	2.0	2.0	
2.0	Tariff reform	2.6	2.6	2.6	2.6	2.7	2.7	2.9	2.9	2.9	1.4	1.5	1.7	1.8	1.8	2.1	2.0	2.0	2.1	2.2	2.1	2.1	2.0	2.1	2.1	2.0	2.0	2.1		
2.1	Structure of tariffs	2.3	2.4	2.4	2.4	2.6	2.6	2.9	2.9	3.0	1.0	1.0	1.0	1.0	1.0	1.8	1.7	1.7	1.9	2.0	2.0	2.0	2.0	2.0	2.1	1.9	1.9	2.0		
2.1.1	Political vs. regulated operators	2.0	2.0	2.0	2.0	2.0	2.0	2.3	2.3	2.3	1.0	1.0	1.0	1.0	1.0	1.7	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	
2.1.2	Natural monopoly pricing	2.3	2.3	2.3	2.3	2.7	2.7	3.0	3.0	3.3	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.3	1.7	1.7	1.7	1.7	2.0	1.7	1.7	2.0	2.0	2.0	
2.1.3	Potentially competitive businesses pricing	2.7	3.0	3.0	3.0	3.0	3.0	3.3	3.3	3.3	1.0	1.0	1.0	1.0	1.0	1.7	1.7	1.7	1.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
2.2	Payments	3.0	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.3	1.7	1.9	2.3	2.6	2.6	2.6	2.6	2.6	2.6	2.5	2.3	2.3	2.2	2.3	2.3	2.3	2.3	2.5		
2.2.1	Intra-industry payments ratios	3.0	3.0	3.0	3.0	3.3	3.3	3.3	3.3	3.3	1.3	1.7	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.0	3.0		
2.2.2	Final consumers collection rates	3.0	3.3	3.3	3.3	3.3	3.3	3.7	3.7	3.7	2.0	2.3	2.7	3.0	3.0	3.0	3.0	3.0	3.0	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.3	2.3		
2.2.3	State indebtedness	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	1.7	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.7	1.3	1.3	1.3	1.7	1.7	1.7	1.7	1.7		
2.3	State funding	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.7	1.7	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9			
2.3.1	Subsidies level	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.0	2.0	2.0	1.7	1.7	1.7	1.7	1.7	1.7		
2.3.2	Subsidies procedure	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
3.0	Regulatory and institutional development	2.4	2.4	2.2	2.1	2.1	2.1	2.3	2.3	2.5	1.2	1.2	1.3	1.3	1.3	1.6	1.4	1.6	1.6	2.4	2.4	2.4	2.5	2.5	2.7	2.6	2.6	2.7		
3.1	Effective regulatory institution	2.4	2.6	2.3	2.2	2.2	2.2	2.6	2.6	2.7	1.3	1.4	1.5	1.5	1.5	1.8	1.8	1.8	1.8	2.0	2.1	2.1	2.2	2.2	2.3	2.5	2.5	2.5		
3.1.1	Management selection for competitive	2.7	2.7	2.3	2.3	2.3	2.3	2.7	2.7	2.7	1.3	1.3	1.3	1.3	1.7	1.7	1.7	1.7	1.7	2.3	2.3	2.3	2.3	2.7	2.7	2.7	2.7	2.7		
3.1.2	Independence of regulator, insulation from	2.3	2.7	2.3	2.3	2.3	2.3	2.7	2.7	2.7	1.0	1.0	1.3	1.3	1.3	1.7	1.7	1.7	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
3.1.3	Transparency of regulation	2.3	2.3	2.3	2.0	2.0	2.0	2.3	2.3	2.7	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.7	2.0	2.0	2.3	2.3	2.7	2.7	2.7	2.7		
3.2	Access regulation	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.3	1.0	1.0	1.0	1.0	1.0	1.3	1.0	1.3	1.3	2.7	2.7	2.7	2.7	2.7	3.0	2.7	2.7	3.0		



Appendix 1. Infrastructure Indicator evaluation (continuation)

Indicator	Power						Gas						Water and Wastewater							
	00-N	01-M	01-N	02-M	02-N	03-M	03-N	04-J	05-J	06-J	00-N	01-M	01-N	02-M	02-N	03-M	03-N	04-J	05-J	06-J
EBRD indicator	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
IERP indicator	2.37	2.49	2.51	2.51	2.49	2.60	2.56	2.56	2.56	2.56	1.89	2.04	2.09	2.06	2.05	2.04	2.06	2.06	2.04	2.04
1.0 Commercialization and privatization	2.4	2.5	2.5	2.5	2.5	2.7	2.6	2.6	2.6	2.6	1.6	1.7	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.7
1.1 Ownership	2.2	2.3	2.4	2.4	2.4	2.6	2.6	2.6	2.6	2.6	1.8	1.8	1.9	1.9	1.7	1.6	1.6	1.6	1.6	1.6
1.1.1 Natural monopoly	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1.1.2 Potentially competitive businesses	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
1.1.3 Ancillary businesses	1.3	1.3	1.3	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
1.2 Operation	2.5	2.6	2.6	2.6	2.6	2.8	2.8	2.8	2.8	2.8	1.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
1.2.1 Natural monopoly	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
1.2.2 Natural monopoly planning and investment	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
1.2.3 Private sector participation in service	1.7	1.7	1.7	1.7	1.7	2.3	2.3	2.3	2.3	2.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1.3 Organizational structure	2.5	2.5	2.5	2.5	2.5	2.7	2.4	2.4	2.4	2.4	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
1.3.1 Separation of natural monopoly and potentially competitive businesses	3.7	3.7	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
1.3.2 Separation of ancillary businesses	1.3	1.3	1.3	1.3	1.3	1.7	1.7	1.7	1.7	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1.3.3 Decentralization	2.2	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.0	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.3	2.3
2.0 Tariff reform	2.7	2.7	2.7	2.7	2.7	2.9	2.9	2.9	3.0	3.0	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
2.1 Structure of tariffs	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2.1.1 Political vs. regulated operators	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
2.1.2 Natural monopoly pricing	2.3	2.3	2.3	2.3	2.3	3.0	3.0	3.0	3.0	3.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
2.1.3 Potentially competitive businesses pricing	1.9	2.8	2.9	2.9	3.0	3.0	3.0	3.0	3.0	3.0	1.9	2.7	3.0	2.8	3.0	3.0	3.2	3.2	3.0	3.0
2.2 Payments	2.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.3	3.3	3.3	3.3	3.3	3.3	3.0	3.0
2.2.1 Intra-industry payments ratios	2.0	3.0	3.3	3.3	3.7	3.7	3.7	3.7	3.7	3.7	2.0	2.7	3.3	2.7	3.3	2.7	3.3	3.3	3.0	3.3
2.2.2 Final consumers collection rates	1.7	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.7	2.3	2.3	2.3	2.3	3.0	3.0	3.0	3.0	3.0
2.2.3 State indebtedness	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
2.3 State funding	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
2.3.1 Subsidies level	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
2.3.2 Subsidies procedure	2.5	2.5	2.5	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
3.0 Regulatory and institutional development	2.7	2.7	2.7	2.7	2.4	2.6	2.6	2.6	2.6	2.6	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
3.1 Effective regulatory institution	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
3.1.1 Management selection for competitive	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
3.1.2 Independence of regulator, insulation from	3.0	3.0	3.0	3.0	3.0	2.7	2.7	2.7	2.7	2.7	1.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
3.1.3 Transparency of regulation	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
3.2 Access regulation	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0



Appendix 2. General description of the infrastructure indicators

This appendix presents a brief description of the criteria for scoring each indicator.

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 **Natural monopoly.** A natural monopoly is a network operator. A score of one means that the whole network is state owned; the score increases with an increasing share of corporatised, privatised and newly constructed private fixed networks in the total length of networks. The maximum score is reached with private ownership of all networks.

1.1.2 **Potentially competitive businesses.** A potentially competitive business is an operator using networks to provide its services; it is a market related to a natural monopoly. A score of one implies that the businesses are part of the state owned natural monopoly. The score increases with separation, corporatisation and privatisation of existing operators, or with increased market penetration by newly established private agents. The maximum is reached when all the businesses are in private ownership.

1.1.3 **Ancillary businesses.** Ancillary businesses are concerned with network construction, its maintenance, inputs supplies, and social infrastructure. A score of one means that these businesses are state owned. The score increases with the degree of separation, corporatisation and privatisation, or the increase in new private establishments.

1.2 Operation

1.2.1 **Natural monopoly.** A score of one is given when the natural monopoly is operated as a government department. The score increases with reorganisation into an independent state agency or a company, and the establishment of an independent regulator. The maximum score is assigned if a private company manages the natural monopoly, and only an independent regulator, established by law, can intervene.

1.2.2 **Natural monopoly planning and investment decisions.** A score of one implies political interference in making business and investment decisions. The score increases as commercial objectives such as profitability and operational efficiency grow in importance. The highest score applies if network extensions and new investment projects are realised solely based on profitability considerations and reflect marginal social costs.



1.2.3 **Private sector participation in service contracts.** A score of one means that the private sector does not participate in construction, maintenance or rehabilitation, etc. The score increases with increasing participation in these activities by the private sector.

1.3 Organisational structure

1.3.1 **Separation of natural monopoly and potentially competitive businesses.** A score of one means no separation between the infrastructure and the service providers' managements, as well as separation between the managements of different service providers. The score increases with unbundling of the industry. The highest score applies when different services are provided by separate private companies.

1.3.2 **Separation of ancillary businesses.** A score of one means no separation of ancillary businesses from the natural monopoly or potentially competitive businesses. The score increases with increasing degrees of separation. The maximum score is assigned when ancillary services for the natural monopoly and for potentially competitive businesses are supplied by the market.

1.3.3 **Decentralisation.** A score of one implies no or minimal decentralisation and increases with increasing decentralisation. Decentralization is both regional and functional and implies autonomy of decision making at the regional level concerning tariffs and investments. The highest score is assigned when the industry is divided into competing regional operators.

2.0 Tariff reform

2.1 Structure of tariffs

2.1.1 **Political vs. regulated operators.** A score of one implies strong political interference in tariff setting. The score increases with declining political interference and its transfer from the central government to the corresponding government agency and finally to the regulatory body. The maximum score is reached for full cost reflective tariff setting by an infrastructure operator regulated by an independent regulator.

2.1.2 **Natural monopoly pricing.** A score of one corresponds to pricing below cost accompanied by a substantial amount of cross-subsidisation. The score increases as the tariff approaches the long-run marginal cost reflecting cost covering levels, with cross-subsidisation declining.

2.1.3 **Potentially competitive businesses pricing.** A score of one means a lack of cost reflective pricing. The score increases with markets becoming increasingly competitive and prices approaching market equilibrium levels.

2.2 Payments



- 2.2.1 **Intra-industry payment ratios.** A score of one implies that arrears are constantly accumulating and transactions between companies within an industry are basically non-monetary. The score increases as monetary settlements are carried out and arrears are approaching zero.
- 2.2.2 **Final consumer collection rates.** A score of one means low revenue collection from final consumers (households, companies, budgetary organizations) and constantly accumulating arrears. The score increases as progress with revenue collection is made and services are fully paid for. Apart from a non-linear pattern of evaluation grades with respect to payment percentage improvements in each sector, there is non-homogeneity of the patterns across sectors. The six sectors were divided into two groups in accordance with the potential efforts needed to reach higher payment levels. Telecommunications and roads represent the first group, where high levels of payments are relatively easy to achieve. The railroad, power, gas, and water supply sectors were put into the second group, where comparatively small improvements can be defined as considerable successes.
- 2.2.3 **State indebtedness.** A score of one corresponds to growing arrears for state compensations to privileged consumers. The score improves as this indebtedness is reduced zero.

2.3 State funding

- 2.3.1 **Subsidies level.** A score of one means that some groups of consumers are heavily subsidised by the state in an explicit or implicit form. Both the depth of the subsidisation and the distribution of subsidies are important. The government may pursue a constant practice of debt forgiving and restructuring. Abstention from implicit and explicit subsidies leads to improved scores.
- 2.3.2 **Subsidies procedure.** A score of one is assigned when the subsidies are directed to service suppliers and are provided in non-transparent ways. The score improves as the process becomes more transparent and income compensations replace price compensations.

3 Regulatory and institutional development

3.1 Effective regulatory institutions

- 3.1.1 **Management selection for competitive businesses.** A score of one means that state officials appoint the management. The score increases when the management is elected by the shareholders and reaches its maximum when the shareholders are private companies or individuals.
- 3.1.2 **Independence of regulator, insulation from political influence.** A score of one is assigned when a government department provides the service. The score increases as a state



commission is introduced and an independent regulator is established. The highest score applies when an independent regulator acts according to law.

- 3.1.3 **Transparency of regulations.** A score of one implies an absence of legislation defining clear rules of the game for businesses, and obligations of government bodies. The score increases with the development of legislation and its enforcement, including when the decision-making becomes public. The maximum score is reached when an independent regulator alone regulates the performance of the natural monopolies in an industry in accordance with law, and all decisions are disclosed.
- 3.2 **Access regulation.** A score of one means that the access right is arbitrarily determined by the state or the state-owned operator. The score increases as access is regulated by an independent regulator, later negotiated, finally determined by market mechanisms.



Appendix 3. Explanations for the infrastructure indicator evaluations given in Appendix 1 (August 2005 - August 2006)

TELECOMMUNICATIONS

1.0 Commercialisation and privatisation

1.1 Ownership

- 1.1.1 The state-owned monopoly Ukrtelecom still controls about 80% of the fixed-line telephone market and owns the largest primary network. The indicator remains unchanged at 1.7.
- 1.1.2 Growing competition signifies a positive development in the mobile segment. There are some improvements in the regulation of IP-telephony since the NCRC now got the possibility to grant the license to operators thus transforming the situation into the legal framework. Hence the score has slightly improved to 3.0.
- 1.1.3 The ownership structure in the ancillary businesses did not change. The indicator remains unchanged at 2.0.

1.2 Operation

- 1.2.1 The indicator was left unchanged at 2.0.
- 1.2.2 Ukrtelecom's decision of redistribution profits to the state in 2005 as well as the adoption of financial plans for 2006 was politically influenced, and efficiency considerations were forfeited in favour of activities boosting the state's income. The indicator remains at 1.7.
- 1.2.3 The private sector continues to increase its participation in many competitive segments. The indicator remained at 2.3.

1.3 Organizational structure

- 1.3.1 Preferential position of Ukrtelecom in granting the 3-G mobile licensing distorts the competition in the sector. Hence, the indicator remains 2.0.
- 1.3.2 The organizational structure of the auxiliary businesses remained unchanged, and so does the indicator.
- 1.3.3 The indicator remains unchanged.

2.0 Tariff reform

2.1 Structure of tariffs

- 2.1.1 The NCRC has got the right to set tariffs. Nevertheless, actually the process remains under high political pressure. Thus, the indicator remains at the level of 2.3.



2.1.1 The practice of cross-subsidization tends to decrease due to the intentions of the government to increase the tariffs for domestic calls and decrease the price of long-distance calls. So the indicator increases from 3.0 to 3.3.

2.1.2 The regulation on interconnections and inter-payments allowed avoiding deviations from equilibrium pricing. The indicator remains at 3.3.

2.2 Payments

2.2.1 There were no major developments in intra-industry payments. The indicator has remained at 3.3 level.

2.2.2 The indicator remains unchanged at 3.7.

2.2.3 The state's indebtedness indicator remains at 3.0 level.

2.3 State funding

2.3.1 The level of state subsidization is planned to decrease through the increase on tariffs. Thus the indicator remains at 2.7.

2.3.2 The subsidies procedure has not experienced significant changes thus remaining the indicator at 2.0 level.

3 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 The management selection procedure for competitive business has not improved so does the indicator.

3.1.2 The establishment of the NCRC solved the majority of the sector's regulatory problems. However, the political and financial independence remains rather complicated issue. The indicator remains at 2.7.

3.1.3 The indicator improved to 2.7 level due to a higher publicity of the decision making process of the independent regulator.

3.2 **Access pricing regulation method.** The problems with IP-telephony granting licensing has been partially resolved through transferring this function to the NCRC thus the indicator has slightly improved to 2.3.

RAILWAYS

1.0 Commercialisation and privatisation

1.1 Ownership

1.1.1 The basic rail network is 100% state owned. Sales/transfers of local railways take place occasionally. The indicator has not been changed.

1.1.2 Passenger and freight transportation are 100% state owned. Forwarding enterprises are mostly private. Freight railway cars are partially in private ownership. The indicator has not been changed.

1.1.3 The construction, maintenance and service enterprises are corporatized. The UZ has acquired control stake in the bank which serves the UZ's accounts. On some routes the UZ has included into



the price of tickets the cost of obligatory breakfast. The indicator remained the same 1.7.

1.2 Operation

- 1.2.1 The railways are regulated by the State Railways Administration, which is integrated into the Ministry of Transport. The posts of deputy minister and director general of the UZ were separated. However until this separation is supported by a respective law this step can not be considered as sufficient to change the respective indicator, which remained 1.7.
- 1.2.2 The State Railways Administration strives for operational efficiency and profitability of the industry. UZ now issues tenders for its projects. The indicator was not changed.
- 1.2.3 Rail line construction and rolling stock maintenance is provided by state enterprises and joint stock ventures, which belong to the state. The indicator has not been changed.

1.3 Organisational structure

- 1.3.1 The railway infrastructure, passenger and freight transportation services are integrated within Ukrzaliznytsia, but keep separate accounts. Cross-subsidization is transparent, separate accounts for freight and passenger transportation are available. The indicator has not been changed.
- 1.3.2 Ukrzaliznytsia has been charged with the management of more ancillary businesses. The indicator has not been changed.
- 1.3.3 The railways are split into 6 regional companies. The South-Western Railway is allowed to issue bonds. The indicator has not been changed.

2.0 Tariff reform

2.1 Structure of tariffs

- 2.1.1 Tariffs for passenger transportation were increased in order to reduce losses from passenger transportation. There is a plan of adjustment of the tariffs to the cost-covering level. However, the tariff-setting procedure remains non-transparent. The indicator was increased from 1.3 to 1.7.
- 2.1.2 Cross-subsidisation of passenger transportation by freight transportation slightly reduced. Ukrainian Railways shows increasing profits. The indicator was increased from 2.0 to 2.3.
- 2.1.3 The tariffs do not precisely reflect the infrastructure and rolling stock operating costs; however overall, the costs are covered. The indicator has not been changed.

2.2 Payments

- 2.2.1 Intra-industry payments are stable. The indicator has not been changed.
- 2.2.2 Monetary payments for freight transportation are almost 100%. The indicator has not been changed.



2.2.3 State subsidies are provided at levels set in the central state budget and go mainly to financing of vocational training and other non-production related expenses. The indicator has not been changed.

2.3 State funding

2.3.1 The government still relies on (privileged) passenger transportation funding at the expense of Ukrzaliznytsia. The indicator has not been changed.

2.3.2 Subsidies are paid to the railways (service provider). The indicator has not been changed.

3.0 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 The President of Ukraine appoints the top management, although the government body operating the railways is formally independent. Management decisions are increasingly insulated from political interference. The indicator has not been changed.

3.1.2 The railways regulator is part of the government and is integrated with the rail line operator. The indicator has not been changed.

3.1.3 Tariffs are fixed by legislation. A transport tariff policy is being developed to increase the transparency and efficiency of tariff setting procedures. The indicator has not been changed.

3.2 Access pricing regulation method. Access is regulated with government permission. The index remained at 1.3.

ROADS

1.0 Commercialisation and privatisation

1.1 Ownership

1.1.1 Roads of the public use are 100% in state and communal ownership. The indicator has not been changed.

1.1.2 Freight transportation are mostly provided by private companies. The share of private sector in passenger transportation is increasing. The indicator has not been changed.

1.1.3 The social infrastructure, services, and automobile maintenance enterprises are mostly private. Publicly owned companies provide most of the road maintenance and construction (at least as main contractors). The indicator has not been changed.

1.2 Operation

1.2.1 Regulation and management of the road network are separated from each other. The regulatory body (Ukrainian Road Service) is the principal managing body of the State Joint Stock Company "Motor Roads of Ukraine". The indicator has not been changed.

1.2.2 More emphasis was put on developing concession projects. The indicator has not been changed.

1.2.3 Road construction and maintenance is provided mostly by state owned corporations and by some private firms. Most construction



work is done by the local subsidiaries of the State JSC "Motor Roads of Ukraine". The indicator has not been changed.

1.3 Organisational structure

- 1.3.1 Roads management is separated from freight and passenger transportation services. The indicator has not been changed.
- 1.3.2 Road construction and maintenance are separated from transportation; some services are contracted out. The indicator has not been changed.
- 1.3.3 Roads are financed and operated at both the central and regional levels. Municipal authorities can make investment decisions on local road construction using the vehicle tax funds they collect. The indicator has not been changed.

2.0 Tariff reform

2.1 Structure of tariffs

- 2.1.1 The government sets tariffs for passenger transportation. The indicator has not been changed.
- 2.1.2 Officially road funding derives from an excise tax on fuel and certain other taxes. For the first time, these taxes are fully directed towards road construction and maintenance in 2006. The indicator has been increased from 1.7 to 2.0.
- 2.1.3 The level of tariffs is still can not be considered as cost-effective. The evidence suggests that the investment in fixed assets of local transport enterprises is conducted at the expense of the Central budget. The indicator remains the same.

2.2 Payments

- 2.2.1 The enterprises that conducted works from maintenance and construction of roads ("Avtomobilni dorogy Ukrayiny") has worsened their financial results mainly due to the write-off of the old debts that had occurred in 2000-2002 and poor management. Payment arrears between enterprises subordinated to Ukravtostrans decrease. In particular, bills payable decreased by 14% in 2005, bills receivable decreased by 18% by the end of 2005. Thus, the indicator was not changed.
- 2.2.2 Payments are mostly monetary but the enterprises that conduct roads maintenance and construction also receive capital transfers from the budget. According to the accounting chamber, this capital investment is not transparent. Compensation for privileged passenger transportation remains an unresolved issue. The indicator has not been changed.
- 2.2.3 Despite substantial increase of investment in road in recent years, financing remains insufficient due to the poor state of the sector. However, starting from the year 2006, the budget envisage full financing in compliance with the program of sector development for 2005-2010. Thus, the indicator was increased from 1.7 to 2.0.

2.3 State funding



2.3.1 The number of privileged passengers remains high. Compensation levels are inadequate. The indicator has not been changed.

2.3.2 Subsidization of privileged passengers is frequently put onto the shoulders of service providers. The indicator has not been changed.

3.0 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 Only the management of the road operation services is appointed by the government. The indicator has not been changed.

3.1.2 Road Service of Ukraine, the regulatory body in the sector, is organisationally separated from the government. The indicator has not been changed.

3.1.3 The Transport Ministry has approved a program to adapt the Ukrainian transportation laws to EU standards. The indicator was not changed.

3.2 Access pricing regulation method. Access is regulated by licensing. Tenders for servicing city bus routes were introduced. Price for international permissions has decreased, the terms of custom control procedure was shortened, the procedure of licence issue for provision of transport services was simplified. The indicator was increased from 2.7 to 3.0.

POWER

1.0 Commercialisation and privatisation

1.1 Ownership

1.1.1 The controlling stakes in 13 (out of 27) regional distribution companies (oblenergoss) were sold. All of the stakes in the distribution companies still belonging to the state were united in the Energy Company of Ukraine holding. The indicator has not been changed.

1.1.2 The nuclear, hydro and fossil fuel generating plants were separated into different companies. The nuclear and hydro generating plants remain 100% state property, while three fossil fuel generating companies were partially privatised, however the state remained the major owner. All of the state stakes in power plants, with the exception of the nuclear stations, were united in the Energy Company of Ukraine holding. The indicator has not been changed.

1.1.3 Social infrastructure, construction and maintenance are still treated as part of the natural monopoly. The indicator has not been changed.

1.2 Operation

1.2.1 The regional distribution companies are corporatized, some of them are in private hands, all are regulated by the NERC. The grid is operated as a part of Ukrenergo. The indicator has not been changed.



1.2.2 Decision-making is still politically influenced. This is likely to diminish due to pressures from private investors (guaranteed profitability). The indicator has not been changed.

1.2.3 Construction and maintenance are managed by the oblenergos. Private sector participation gradually increases. The indicator has not been changed.

1.3 Organisational structure

1.3.1 Generation, transmission and distribution are separated into independent companies. State stakes in the power sector, with the exception of nuclear stations, are united in Energy Company of Ukraine. The indicator has not been changed.

1.3.2 There is a minimal degree of separation. The private sector is marginally involved. The indicator has not been changed.

1.3.1 Decentralisation is not a high priority in this industry.

2.0 Tariff reform

2.1 Structure of tariffs

2.1.1 The NERC become more independent in its decisions. Cost-effectiveness of households tariffs slightly improved. The announced the plan of households tariff adjustment to cost-covering level, which is aimed to be finished till April 2008. The NERC still acts on the basis of decrees of the Cabinet of Ministers. The indicator was increased from 3.0 to 3.3.

2.1.2 Cross-subsidisation of households improved. Preferential tariffs for large consumers were introduced; geographical cross-subsidization persists through equalising the tariffs throughout the country. The indicator was not changed.

2.1.3 Real competition at the wholesale power market is noted. Power generating companies compete by bidding. At the same time the absence of modern meters allowing instantaneous consumption measurements prevents the customers' consumption to be billed according to the load curve. The indicator has not been changed.

2.2 Payments

2.2.1 The situation is stable, but some settlements are still made in non-cash form. The indicator has not been changed.

2.2.2 The average level of cash payments by the oblenergos to the wholesale electricity market is stable. The indicator has not been changed.

2.2.3 The state budget foresees 100% payment for consumed power but the actual payments are below this level.

2.3 State funding

2.3.1 The poorest people are subsidised, the number of privileged categories remains substantial. The indicator has not been changed.

2.3.2 Subsidies are paid to the oblenergos. The indicator has not been changed.



3.0 Regulatory and institutional development

3.1 Effective regulatory institutions

- 3.1.1 The management is appointed by the state. The indicator has not been changed.
- 3.1.2 The NERC is governed by decrees issued by the President and the Cabinet of Ministers, there is no law defining its rights and obligations. The indicator has not been changed.
- 3.1.3 More transparency has been introduced into the distribution of moneys for power supplied to the wholesale market. The indicator has not been changed.

3.2 Access pricing regulation method. Access is regulated by the NERC, but without a strong legislative base. The indicator has not been changed.

GAS

1.0 Commercialisation and privatisation

1.1 Ownership

- 1.1.1 The trunk pipeline and the distribution net are 100% state property, however, NAK Naftogaz is corporatized, minor shares of some regional gas distribution companies (oblgas) are owned by private parties. The indicator has not been changed.
- 1.1.2 The share of state ownership in gas extraction is very high. The company "Vanco V.I. Ltd" got a permission to extract gas at Prikerchenskiy region. Naftogaz also signed an agreement with the company "Shell Exporation and Produktion Ukraine" on collaboration in gas extraction activity. All the import to Ukraine is conducted by RUE (which is 50% owned by "Gazprom" and 50% by private persons). RUE supplies gas to Ukraine according to agreements signed at national level. The indicator has not been changed.
- 1.1.3 The presence of the second company UkrGasEnergo at the market increases the role of gas traders. The construction, maintenance and service efforts are carried out mainly by NAK Naftogaz, but unrelated businesses were split off. A private company is carrying out some contracts for trunk pipeline modernisation. The indicator has not been changed.

1.2 Operation

- 1.2.1 NAK Naftogaz is subject to supervision by the government and the President; it can however operate as a market company. The indicator has not been changed.
- 1.2.2 The commercial objectives remain poorly defined. The investment decisions are made in a non-transparent basis. The actions of the management contradict the objectives of profitability (purchase of luxuries for the top management). The indicator has not been changed.
- 1.2.3 Some private companies are involved to repair and maintenance of the pipelines. The indicator has not been changed.



1.3 Organisational structure

- 1.3.1 NAK Naftogaz was split into extraction, transportation and sales. The indicator has not been changed.
- 1.3.2 There is a minimal degree of separation. The indicator has not been changed.
- 1.3.3 Decentralisation is not foreseen for this industry.

2.0 Tariff reform

2.1 Structure of tariffs

- 2.1.1 The government interference in tariff settings is substantial. The indicator has not been changed.
- 2.1.2 Industrial enterprises have possibility to choose their gas supplier; NERC determines the price of transportation. Recently, the tariffs for gas transportation were increased for all groups of consumers. Households however, are still invoiced at below-cost prices. The tariff for the transit of gas through the territory of Ukraine was increased USD 1.06 to USD 1.6 tcm per 100 km. The indicator has not been changed.
- 2.1.3 NERC sets ceiling prices on natural gas for final consumers according to a Cabinet of Ministers' decree. The indicator has not been changed.

2.2 Payments

- 2.2.1 The price for transit of gas and payment for the supply of gas to Ukraine was separated. Currently, gas transit fee is paid in cash. Arrears accumulation persists. For the first half of the year, Naftogaz has accumulated about USD 0.4 bn of debts before RUE and USD 1 bn before UGE. The growth of debts is mainly explained by increasing debts of gas consumers, mostly of utilities. The indicator was decreased from 3.3 to 3.0.
- 2.2.2 By the end of 2005 the payment discipline slightly improved, overall debts for gas consumption also decreased. However, the debts rose sharply during the first half of 2006 and payment rate reduced to 89%. The lowest payment rate is associated with public utilities (63%). The tariffs for final users of utility services were adjusted with a long lag after the price for gas was increased. The energy companies intensified installation of gas meters. Stronger mechanism of collecting debts is enforced. Additional requirements for gas supply were set: 100% payment guarantee and 10% advanced payment for gas. The indicator was decreased from 3.3 to 3.0.
- 2.2.3 The state remains among the debtors; Naftogaz bears the costs of supplying gas to households. However, there was a two-stage increase in tariffs for population and utility enterprises. These increased are promised to follow the gas price increase and at the end should cover the costs. The budget arrears increased from UAH 10 m to UAH 15.6 m. The indicator was not changed.

2.3 State funding



- 2.3.1 The poorest households are subsidised. The increase of tariffs for population was introduced with a significant lag. The indicator was not changed.
- 2.3.2 Subsidies are paid to the public sector enterprises. The state budget 2006 still does not envisage higher financing of subsidies caused by gas price increase. The indicator has not been changed.
- 3.0 Regulatory and institutional development**
- 3.1 Effective regulatory institutions**
- 3.1.1 The government appoints the management, although NAK Naftogaz is formally independent. The indicator has not been changed.
- 3.1.2 NAK Naftogaz is subject to government control. The indicator has not been changed.
- 3.1.3 Gas auctions were resumed. Gas traders get more access to the market after UkrGasEnergo entered the market. The indicator has not been changed.
- 3.2 Access pricing regulation method.** Access is regulated by the NERC, but without a strong legislative base. The indicator has not been changed.

WATER AND WASTEWATER

1.0 Commercialisation and privatisation

1.1 Ownership

- 1.1.1 The natural monopolies (water distribution and drainage systems) are mostly in communal ownership (88%), 5% are state owned, and 7% are privately held. The index remains at the level of 1.3.
- 1.1.2 Most potentially competitive businesses (water supply and wastewater treatment) are still integrated with the natural monopolies and are mostly in communal ownership. The indicator has not been changed.
- 1.1.3 Construction and maintenance are integrated with the natural monopolies and are also mostly in communal ownership. The indicator has not been changed.

1.2 Operation

- 1.2.1 Water and wastewater services are provided by local monopolists administered by local governments, which are also the owners of the companies in most cases. In Kirovograd water supply enterprise were leased to private company. The indicator has not been changed.
- 1.2.2 The political influence on decision-making is very strong, local governments pursue goals of social support. The indicator has not been changed.
- 1.2.3 Private sector participation in service contracts is low; where it exists it is mostly due to the participation of international financial institutions. The indicator has not been changed.



1.3 Organisational structure

- 1.3.1 No separation. The indicator has not been changed.
- 1.3.2 No separation. The indicator has not been changed.
- 1.3.3 Companies operate only under the supervision of the local authorities. Local governments became less dependent on the central executive powers due to a legal change concerning tariffs and investments. The indicator has not been changed.

2.0 Tariff reform

2.1 Structure of tariffs

- 2.1.1 All tariffs are approved by municipal officials. The CMU approved the common principles of calculation the tariffs for water supply and wastewater treatment. The indicator was increased from 1.3 to 1.7.
- 2.1.2 Tariffs for residential consumers remain at below-cost levels. Average cosy effectiveness is 60-80%. The tariffs for industrial consumers are higher than residential ones on average by 2-3 times. Even with cross-subsidisation the tariffs do not cover costs in almost all regions. The indicator has not been changed.
- 2.1.3 Potentially competitive businesses are integrated parts of the natural monopolies, pricing of the services is not separated. The indicator has not been changed.

2.2 Payments

- 2.2.1 Payment arrears are significant. Major creditors of the industry are the power distribution companies. Average payment rate of the enterprises for the electricity constituted 80% in first half of 2006. The indicator has not been changed.
- 2.2.2 The collection rate from households remains pretty high. However, the total debts for utility services are rising. As of May 1, 2006 total debts for water supply and wastewater treatments services raised by 3.6 % and amounted 1.0 bn. The indicator has not been changed.
- 2.2.3 The local governments fulfil their obligation concerning financing of privileged consumers by more than 50%. The indicator has not been changed.

2.3 State funding

- 2.3.1 The poorest households are subsidised. The amount of subsidisation varies substantially between regions. The indicator has not been changed.
- 2.3.2 Subsidies are paid to the water supply and sewage companies. The indicator has not been changed.

3.0 Regulatory and institutional development

3.1 Effective regulatory institutions

- 3.1.1 Regional governments appoint the management of the water supply and wastewater monopolies. The indicator has not been changed.



- 3.1.2 There is no independent regulator. The indicator has not been changed.
- 3.1.3 Although clear tariff regulation guidelines are available they are not obligatory for local administrations: tariffs continue to be set arbitrarily. The indicator has not been changed.
- 3.2 Access pricing regulation method.** There are no rules for access. The indicator has not been changed.