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Infrastructure Monitoring for Ukraine (IMU)

June 2001

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Summary

1. Infrastructure policy is a central element in the reform process of the Ukrainian economy. Whereas the policy debate is mainly concerned with quantitative measures, e.g. public investments, the qualitative aspects of infrastructure policy are at least as important, e.g. commercialisation, tariff setting, and regulation. The ultimate objective of infrastructure reforms is to supply infrastructure services by efficient, mainly privatised companies, at tariffs close to hypothetical market levels (e.g. long-run marginal costs, complemented by a time-of-use element), and subject to an objective, transparent regulatory process. Ukraine is still far away from this ideal world, same as many other countries of the former Soviet Union.

2. The objective of this infrastructure monitoring effort, designed in accordance with EBRD's infrastructure indicators, is to provide a regular in-depth analysis of policy reforms for six key infrastructure industries: power, gas, water, telecommunication, railways and roads. The infrastructure monitoring produced by the Institute for Economic Research and Policy Consulting (the IERPC) evaluates the current state and the dynamics of the reform process.

3. The following criteria were taken into account when evaluating Ukraine's infrastructure policies: 1) commercialisation and privatisation (ownership, natural monopoly operation, industry organisational structure); 2) tariff reform (structure of tariffs, payment arrears, budgetary payments); 3) regulatory and institutional reforms (effective regulatory institutions, network access regulations). It is important to mention that the IERPC applied universal criteria to all industries, while the EBRD uses individual criteria. Estimations were produced according to a scale ranging from 1 (no reform at all) to 4 (market-oriented reforms almost accomplished); this scale follows EBRD's practice, although it more closely corresponds to the U.S. Grade Point Average principle (4~A, 3.7~A-, 3.3~B+, etc., 1~D).

4. The IERPC follows the EBRD's indicators for reasons of compatibility, however it extends the methodology, first, by indicator dis-aggregation, and second, by measuring the extent to which legislation was implemented and key performance indicators were met, e.g. payment arrears and mutual settlements. Dis-aggregating the indicators and estimating individual aspects has the disadvantage of introducing a bias into the calculations related to individual indicator selection. Nevertheless, the bias of the EBRD indicators related to their estimation procedures may be still higher.

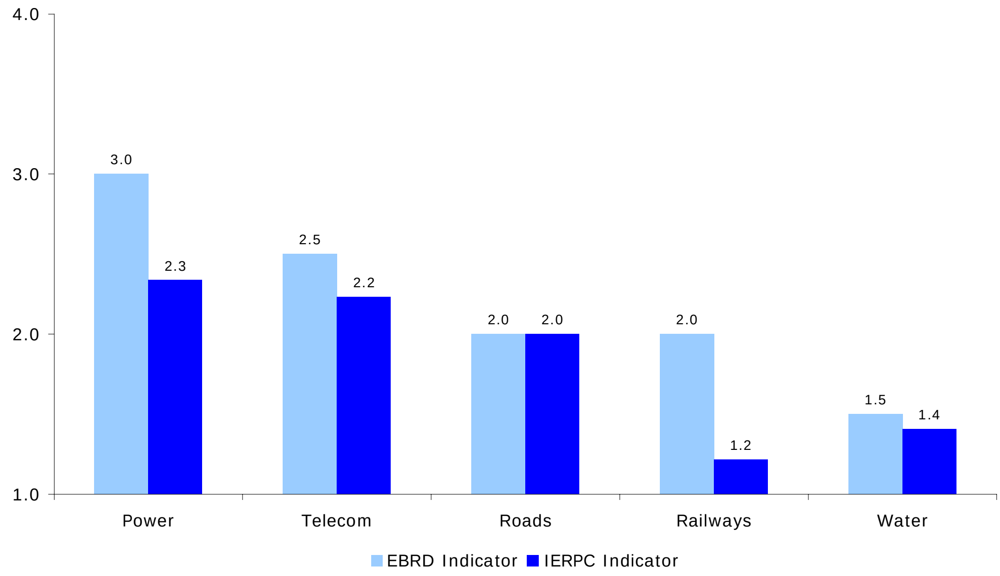
5. In the year 2000 power and telecommunications reforms were accelerated, and reforms in the railways and gas industries were started. The government has achieved some success in fighting the non-payment problem in the power industry through the introduction of distributive accounts. In April 2001 it privatised 6 distribution companies. Also, there was some success in fighting the non-payment problem in the gas industry. Privatisation of the gas sector continued. In preparation for privatisation of the major telephone operators, a sale of 25% of the shares by the end of 2001 was approved in 2000. These

preparations are continuing through consolidation of operators' shares. Railway restructuring was started in 2000 by splitting off and divestment of ancillary businesses. The road infrastructure financing became a state responsibility in 2000, is however severely constrained by budget limitations. The alternative of private road construction and maintenance is constrained by low vehicle flow; i.e. is not financially viable. Policies concerning water supply and sewage did not significantly change in 2000-2001: tariffs are still below cost covering levels, net losses remained at a high level and households payment discipline has not changed.

6. The IMU indicators produced by the IERPC turned out to be lower than the EBRD indicators in all industries and they were significantly lower for power and railways. This can be attributed to the difference in methodology of estimation and to the incorporation of key performance and legislation implementation indicators. Higher level of discretion in the IERPC indicators allows seeing that the EBRD indicators overestimate the pace of reforms. We conclude that if the mentioned above factors are not accurately accounted for, than the EBRD indicators over-estimate infrastructure reforms progress in Ukraine. This may raise questions about infrastructure reform evaluations in other countries and suggests that there are ways to improve the methodology.

7. The following figure summarises the infrastructure indicators for Ukraine during the year 2000 and during the first five months of 2001.

Graph 1
Infrastructure indicators for Ukraine



Source: our estimates

1 Background and objectives

Infrastructure modernisation and development is of crucial importance for sustainable growth in Ukraine. Yet progress has been limited thus far. Infrastructure investments, including foreign, have been limited to some individual projects, which have not influenced the overall operational efficiency of the infrastructure sector. A tradition of public ownership and operation of infrastructure, coupled with theoretical justifications for government intervention, placed this sector of the economy among the slowest reformers overburdened with government mismanagement.

Restructuring the sector, an efficient supply of infrastructure services, the introduction of private incentives and the creation of an environment conducive to private investment are government policy goals worthy to be pursued. The Infrastructure Monitoring for Ukraine (IMU) programme is designed as a tool to survey the progress in key infrastructure industries, thus supporting reform.

The IERPC methodology follows EBRD's approach used in estimating the infrastructure indicators for all 26 transition countries. Since 1998, these indicators are published annually in the EBRD 'Transition Report'. The IMU follows EBRD's indicators for reasons of compatibility, however it dis-aggregates the indicators and, thereby, extends the methodology of infrastructure monitoring. A need for extension arises because, first, it is impossible to arrive at objective conclusions at this level of aggregation. Furthermore, the existing indicators do not attach values to such factors of infrastructure reform as poor implementation of legislation, and to such key performance indicators as payment arrears and mutual settlements. Dis-aggregating indicators and producing estimations of individual aspects have the disadvantage of introducing a bias into the calculations related to individual indicator selection. Nevertheless, the bias of the EBRD indicators related to their estimation procedures could be still higher.

The IMU is produced by the Institute for Economic Research and Policy Consulting, an independent research body, in co-operation with Ukrainian companies and the government of Ukraine. The IMU aims at providing an in-depth analysis on a biannual basis (May and November). Indicators developed within the IMU are intended both for monitoring the government's infrastructure policy and for research purposes.

2 Criteria of evaluation

The theoretical justification of the infrastructure evaluation criteria is presented in detail in the EBRD "Transition Report 1996".[1] The main idea behind the IMU is to trace ownership, market structures, and regulatory changes in order to be able in future research to relate them to efficiency changes.[2] The important difference between the EBRD and the IERPC

[1] See EBRD (1996). *Transition Report 1996*, London, pp. 34-76.

[2] This is explained in EBRD (1996). *Transition Report 1996*, London, p. 50.

approach is that the IEPRC applies universal criteria to all industries, while the EBRD follows individual criteria.

The IMU indicators, following EBRD's approach, focus on three broad areas of reform: commercialisation and privatisation, tariff reform, and regulatory and institutional development.[3] The indicator of each of the infrastructure industries (telecom, railroad, etc.), that describe the country's success in transition is calculated as the mean of three narrower aspects. These in turn are based on the means of the specific indicators that refer to the peculiarities of the infrastructure industry in question. In total there are 21 infrastructure indicators common to all infrastructure industries. Their descriptions and their scoring methods are presented in Annex 2 and Annex 3. The IERPC indicators use the same scale as the EBRD indicators, i.e. from 1 to 4, but plus and minus scoring was added. For example, 1+ is equal to 1.3 and 2- is equal to 1.7.

Commercialisation and privatisation is divided into the following three aspects:

- ownership transformation of the natural monopoly, of potentially competitive businesses and of ancillary businesses;
- operation (management) of the natural monopoly, of potentially competitive businesses and of ancillary businesses;
- progress in organisational separation of potentially competitive and ancillary businesses from the infrastructure, and the level of decentralisation.

Tariff reform is evaluated under such aspects as:

- structure of tariffs including a tariffs setting procedure, cost covering pricing of the natural monopoly, free market prices in potentially competitive businesses;
- payment arrears between/within infrastructure and potentially competitive businesses, consumer payment collection, budget compensation for indebtedness;
- level and procedure of budgetary payments.

Regulatory and institutional development is evaluated using criteria such as:

- design of effective regulatory institutions including management selection in potentially competitive businesses, independence of the natural monopoly regulator, and transparency of the regulation procedures;
- network access regulation concerning regulation method and level of access pricing.

[3] See EBRD (2000). *Transition Report 2000*, London, p. 41.

3 Ukrainian infrastructure policies, 2000-2001

From the start of 2000 until now, reforms in most infrastructure industries have accelerated in Ukraine. This can be attributed to the coming to power of a reformist government. Up to that time progress in infrastructure reform and modernisation was very limited. Public ownership and operation of infrastructure in the absence of market incentives corrupted the management. All infrastructure industries were non-transparent due to mutual arrears, barter operations, and mutual settlements.

After the disintegration of the USSR, Ukraine was left with excessive capacities in most industries and could coast along for some time without new investment or major maintenance. The policy of asset striping primarily benefited industrial management. By the end of the 1990-s this approach could no further be sustained in Ukraine, causing several programs for infrastructure restructuring to be developed, although very few of them were ever implemented.

The new government not only introduced reforms in the power and telecommunication industries, but also unblocked reforms in the gas, railways, and roads industries. However, changes in water and wastewater services were not observable. Fighting non-payment for infrastructure services was one of the government's key priorities in 2000, and some success was achieved in this area. The law “On the 2001 State Budget” prohibits mutual settlements with any budget organization.

3.1 Telecommunications

3.1.1 Situation by 2000

At the beginning of 2000, the telecommunications industry had already made substantial progress towards deregulation but liberalisation of the industry was still far off. All fixed lines were publicly owned and were operated by the 100% state owned corporation Ukrtelecom, which was also the local service provider. Ukrtelecom had a 51% share in the only international operator Utel and a 51% share in Ukraine's largest mobile telephone operator UMC (covering about 50% of the market). The mobile telecommunications market could be judged as being competitive, since phone calls charges declined sharply due to severe competition of five operators.

3.1.2 Reforms during 2000-2001

Adoption of the law on privatisation of Ukrtelecom in July 2000 started the liberalization of the industry.[4] 25% of the shares are supposed to have been privatised through open bidding by the end of 2001, a minimum 50%+1 share will remain in public ownership, a part of the shares will be sold at privileged conditions to employees of the enterprise.[5]

4 Law “On the Privatisation of Ukrtelecom” (13.07.2000), #1869-14.

5 Law “On the Privatisation of Ukrtelecom” (13.07.2000), #1869-14.

In preparation for privatisation, up to 90% of all Utel shares had been acquired by Ukrtelecom by April 2001, the remaining 10% will be bought by 2002. The state's 51% stake in UMC is planned to be sold prior to privatisation and it will become a part of the statutory capital of the Ukrtelecom Communications Company. At this time the selection process of privatisation advisers is being finalised.

3.1.3 Prospects

The privatisation of Ukrtelecom precedes the adoption of a law on telecommunications, which should establish an independent regulatory body and define regulation procedures. Moreover, the draft legislation still does not contain provisions for establishing of an independent government body to manage the state shares of Ukrtelecom. These complementary measures are recommended to be taken to complete the regulatory framework, in order to guarantee a smooth operation of the new Ukrtelecom.

3.2 Railways

3.2.1 Situation by 2000

At the beginning of 2000, the railways were still operated as a government department. Railways infrastructure, freight, and passenger operations are strongly integrated. The Ukrainian railways also incorporate ancillary services and quite an extensive social infrastructure. Although a Ukrainian railways restructuring program had been developed and adopted by 1998, it was not implemented. Having inherited large infrastructure and rolling stock capacities from the USSR, the Ukrainian railways had not invested enough in maintenance and ended up with a 49% share of outmoded equipment.[6] Throughout the 1990s railways tariffs were imposed administratively, without reflecting transportation costs and presumed cross-subsidisation. The railway industry was pervaded by barter operations and assets stripping by ancillary service providers affiliated with the railway management.

3.2.2 Reforms during 2000-2001

In spring of 2000, an investigation of the industry's situation was conducted. A presidential decree initiating restructuring of the industry was adopted in April 2000.[7] In July 2000 began the separation of the social infrastructure, services, railway construction, rolling stock repair and maintenance from the railway infrastructure and rolling stock management. Some railway construction, rolling stock repair and maintenance enterprises were privatised. Freight rolling stock management was

6 State Statistics Committee, 1998.

7 Presidential decree "On the Resolution of the Soviet of National Security and Defence from April 11, 2000 "On the situation of railways transportation in Ukraine and measures to secure its efficient functioning", (20.04.2000), #603/2000.

separated into departments in accordance to their specialisation. The social infrastructure was planned to be transferred to communal ownership. Major achievements in the industry in 2000 were the reduction of arrears and barter payments, leading to an improvement in the financial situation of the industry (the State Administration of Railways Transport of Ukraine ended the year 2000 with over UAH 500 m in profits). Open discussions of railways transportation tariffs were started.

In April 2001 the government was in the process of revising the railways restructuring program of 1998 and developing plans for further restructuring of the industry.

3.2.3 Prospects

At present, the reforms are only at an early stage. Along with the continuation of already initiated reforms the separation of railway infrastructure, freight and passenger transportation, including separate accounting and adjustment of fixed costs should by now have started. Passenger transportation still generated a deficit of about UAH 1 bn in 2000, while the transportation of privileged passenger categories generated another UAH 500 m of deficit[8]. This was balanced by revenues from freight transportation. Comprehensive cost accounting is still to be introduced and cross subsidies are to be eliminated.

3.3 Roads

3.3.1 Situation by 2000

The road infrastructure was financed out of the system of road funds. Financing of these funds was not part of the government budgets; the major source of regional revenues was vehicle taxes, and the state road fund was financed out of corporate revenue taxes. The State Road Corporation, operating the road infrastructure was a separate (though not corporatised) unit of the government managing both state and regional road funds. Construction enterprises were corporatised and their privatisation was under way; some construction work was contracted out to private enterprises, although without open bidding procedures. At the end of December 1999 after an open tendering procedure, a concession for the 84.4 kilometre long Krakovets-Lviv highway was awarded for 45 years to the “Concession Transportation Highways” consortium. The market for trucking services was liberalised. The private sector was also introduced into passenger transportation through licensing, although tariffs were still regulated.

3.3.2 Reforms during 2000-2001

In 2000 a new law came into effect introducing a fuel excise tax to replace the corporate revenue tax. However, with the adoption of the State Budget 2000 all the state and regional road fund revenues and expenditures were

8 Information the State Administration for Railways Transportation of Ukraine.

transferred to the central government with a view towards reducing misuse of the fund. This arrangement continues in 2001. The State Road Corporation receives UAH 490 m from the State Budget, while the fuel excise tax is expected to add more than UAH 1 bn additionally.[9] As the result the State Road Corporation it left with very limited investment funding. The State Road Corporation funds already declined twice during the last four years.[10]

According to a decree issued by the Cabinet of Ministers which stipulates the list of projects allowed for concessions, two roads and the service infrastructure of another road were assigned to concessions. Bids will be accepted till July 2001. The concession for these roads may be problematic, since the low vehicle flow raises questions with their financial viability.

3.3.3 Prospects

The state remains the only significant source of financing for road infrastructure projects. Therefore, budget discipline concerning financing and enforcement of the law are crucial factors for road infrastructure development. User charges for vehicles and fuel taxes would better reflect road usage costs. Open bidding for road construction and maintenance contracts needs to be introduced. Passenger transportation tariffs need to be further deregulated while the list of privileged passengers should be revised.

3.4 Power

3.4.1 Situation by 2000

By 2000 the performance of the Ukrainian power industry was similar to the performance of the power industries in other CIS countries. Non-payments and non-monetary settlements were pervasive, and the level of cross-subsidisation was very high.

Ukraine started to reorganise its power industry in 1994. The industry is regulated by the National Electricity Regulation Commission (NERC) – a formally independent organisation that was created according to a Ukrainian presidential decree of 1994.[11] The aim of the reform was to reorganise the power industry according to the British Pool model. However, to date the industry's performance is far removed from that of a mature market economy.

Seven generating companies were existing: two using hydropower, one using nuclear power, and four based on burning fossil fuels. The transmission and delivery of energy is carried out by 27 regional distribution companies (oblenergos), which buy energy on the wholesale electricity market.

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9 Information of the Ministry of Economy.

10 Information of the State Road Corporation.

11 Presidential decree N 738/94, December 8, 1994.

Though power generation on the one hand, and transmission, distribution and supply on the other hand are now vertically separated, this separation took place only in a formal way. The Ukrainian government still owns the majority of the established companies. Only ten of the 27 oblenergos were partly or fully privatised.

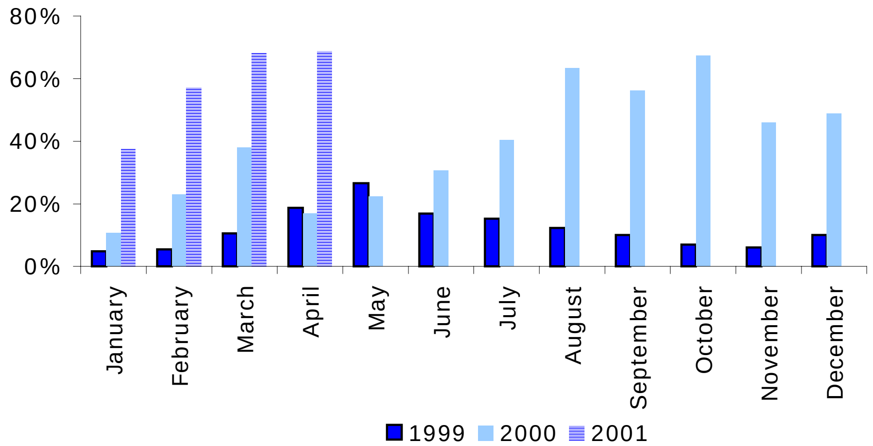
There was still strong political interference in the NERC's operations, especially concerning the setting of tariffs for some consumer groups and the division of revenues between the generating and distribution companies.

3.4.2 Reforms during 2000-2001

Solving the non-payment and the extremely low cash payment problems in the power industry were the key issues for the government during the years 2000 and 2001. The government has achieved some success, especially after July 2000 when amendments to the law "On the Power Industry" introducing distributive accounts was enacted. As a result of this measure, regional distribution companies paid 100.7% of the electricity purchased at the wholesale electricity market. 55.1% of these settlements were in cash between July and December 2000 (see Graph 2), whereas the January to June 2000 and the to figures averaged out to 55.0% and 14.8% respectively.

Graph 2

Cash payments by the oblenergos (% of the electricity supplied)[12]



Source: NERC

By the end of April 2001, the government had privatised 6 oblenergos. An additional 12 oblenergos are planned to be privatised by the end of December 2001 or the beginning of 2002. Privatisation of the four fossil fuel generating companies is planned for 2002.

[12] The data for April is preliminary.

The NERC developed and implemented a new methodology for tariff setting based on the demands of the investors who participated in the oblenergo privatisations. This tariff setting methodology calls for the use of high rates of return, especially for new investments, and defines the limits for commercial losses, for instance due to non-payments. Implementation of this methodology has not yet led to the abolishment of cross-subsidisation of some consumer groups by others.

3.4.3 Prospects

Non-payments and cost-reflective tariff setting are still problems. In order to solve them the government should increase the independence of the NERC by enacting a law on the NERC. These problems must be overcome, otherwise the planned commercialisation of the industry through privatisation of the distribution companies (planned for 2001) and of the generating companies (planned for 2002) will not yield the expected results (100% cash payment for consumed power and increasing competitiveness of the power industry).

3.5 Gas

3.5.1 Situation by 2000

By the beginning of 2000 the performance of gas industry and the problems faced by it were rather similar to the performance and problems in the power industry. Quoting from "THE NEXT 1000 DAYS":

"*Why is the energy sector such an important issue for Ukraine? In many other countries it is an industry like any other. Yet in the Ukrainian economy it is a law unto itself. It is at the root of the country's worst problems, namely, lack of competitiveness (see chapter I), inter-enterprise arrears (II) and budget deficits (IX and X). Unless this burden can be lifted from the Ukrainian economy, there seems to be no way out of the trough.*"[13]

At the collapse of the Soviet Union, Ukraine inherited a well-developed gas network. However, under-investment in maintenance and rehabilitation has caused substantial depreciation, making supply interruptions and an increased number of accidents in the near future very likely. Tariffs applying to households and communal heating companies are significantly lower than industrial tariffs. Unbundling of the industry took place only in a formal way. Thus, gas extraction, transportation and sales are all carried out by state companies which are part of the state holding company NakNaftogaz Ukrainy that is controlled by the President and the government. Energy conservation measures are only declarative.

Ukraine continued to accumulate debts for consumed Russian gas. Also, the likelihood of continuing Russian gas transmission to western Europe declined because of increased illegal gas siphoning.

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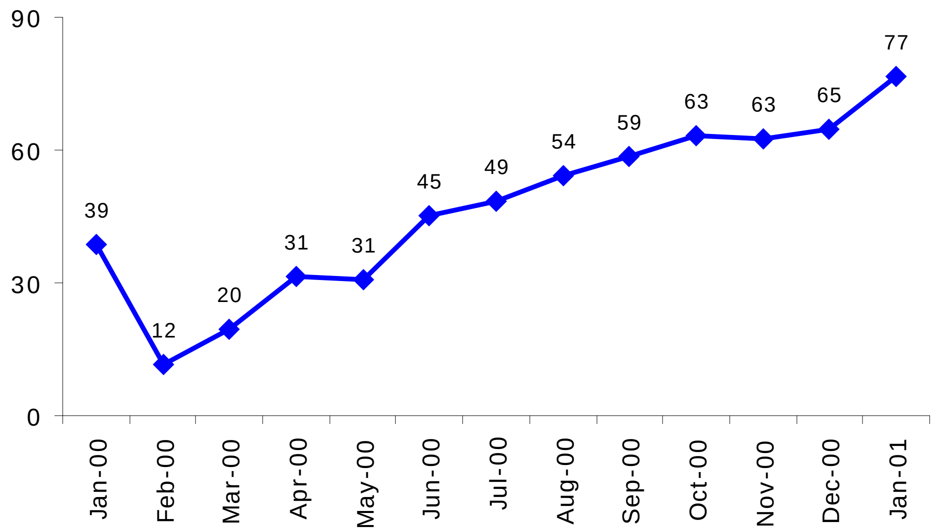
[13] GERMAN ADVISORY GROUP ON ECONOMIC REFORM WITH THE UKRAINIAN GOVERNMENT (NOVEMBER 1999). *THE NEXT 1000 DAYS: ECONOMIC REFORM AGENDA FOR UKRAINE*, KYIV.

3.5.2 Reforms during 2000-2001

In this industry too, solving the problems of non-payment and of non-monetary transactions were the key issues of governmental policy during 2000 - 2001. However, the achievements were rather modest (see Graph 3).

Graph 3
Payments for gas between January 2000 and January 2001 (%)



Source: Cabinet of Ministers “On the execution of governmental programs of action, "Reforms for welfare" in 2000", 5th of March 2001, # 18-633/4

From January to December 2000 the Ukrainian consumer paid only 69.1% on average for consumed gas, of this payments in cash were only 40.6%. Thus, the industry's policy "to live by its own means" remains an empty phrase. Non-payment for consumed gas still does not lead to an immediate disconnection of the debtor from the gas supply. Industrial enterprises paid 64.5% for consumed gas, communal heating utilities paid 61% and most of them still obtain gas for various reasons. Thus, threats by Ukrainian officials to disconnect large debtors in industry, and among communal utilities and agricultural enterprises are not taken seriously. It must also be emphasised that the gas obtained from Russia in payment for transit services was not sold at the market. As before, it was delivered to households and communal heating utilities at prices below the market price, even though the payment ratio of these consumers remained substantially below 100%.

The Securities and Stock Market State Commission of Ukraine registered the first share issue of Nak Naftogaz Ukrainy at a value of UAH 5,564.714 bn. A total of 5,564,714 ordinary registered shares with a face value of UAH 1,000 have been issued. Naftogaz Ukrainy issued these shares in the process of corporatisation. All shares of the company are state-owned. Under current Ukrainian law, privatisation of gas delivery systems, which compose most of Naftogaz Ukrainy's value, is prohibited.

3.5.3 Prospects

The Ukrainian authorities' proclaimed policy "to live by its own means" implies that budget constraints must be hardened. However, the enforcement willingness and ability - taking into account the parliamentary elections in March 2002 - remain very questionable. The future ownership and organisational structure of Nak Naftogaz Ukrainy are the subject of hot discussions that will not soon be finished. Therefore, to anticipate deep structural and operational reforms of the gas industry in the near future would not be realistic.

3.6 Water and wastewater

3.6.1 Situation by 2000

By 2000 water and wastewater services were provided both by municipally owned companies and by companies subject to supervision by municipal authorities. A split-up into separate water and wastewater services took place only in a few cities. In general, industry had never paid for water and sewage services, and as a result industry carries a substantial accumulated debt. Also, household debts amounted to UAH 634 m (see Graph 4). On the other hand, by the end of 1999 the water supply and sewage enterprises themselves had accumulated UAH 751 m in debt for electricity consumed.[14] It should also be noted that invoices for communal services for households cover payments not only for water and wastewater, but also for rent, heating and gas. All these consumer payments are charged of to a communal enterprises account. From this communal enterprise account moneys are transferred to the water and wastewater service providers at a rate lower than the average consumer payment rate.

Tariffs for services were below cost reflective level. Of course, reducing losses within the networks, which are large even by Soviet standards, could significantly decrease costs. However, incentives for cost reduction of such losses are small as long as the service provider can transfer these losses to the consumers. Few households had meters installed; thus invoices are based on an estimation of average household consumption that is likely to be greatly exaggerated.

The qualities of the services were also very low. Thus, the water supply companies did not provide water supply around the clock, except in the capital of the country. But even in Kiev the hot water supply is not available for one or two month in the summer. The deterioration of the equipment also progresses at an alarmingly high level, which might also cause serious damage to the environment.

A law “On concessions”[15] had been enacted providing a legal base for transferring water and sewage services to concessionaires. However, no attempts had been made by municipal authorities to avail themselves of this possibility.

[14] Source: Ministry of Economy of Ukraine.

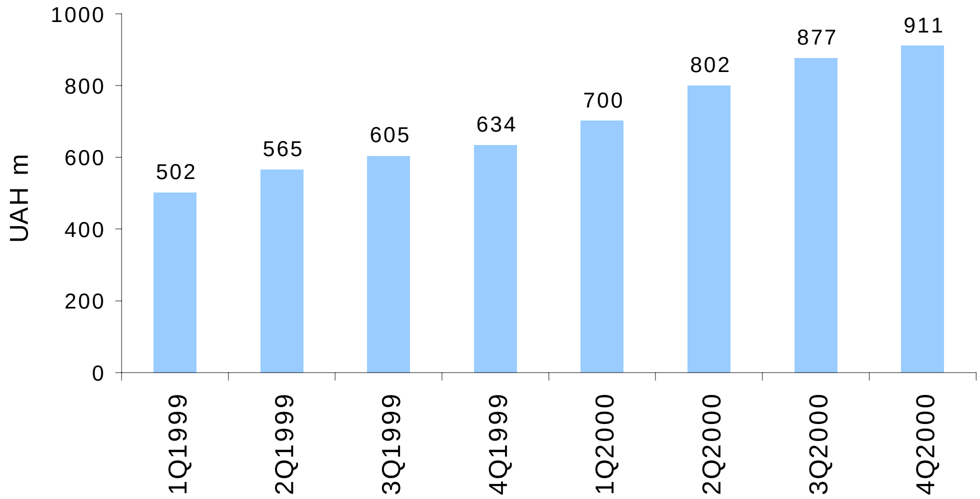
[15] Law “On concessions”. (16.07.99). #997-14.

3.6.2 Reforms during 2000-2001

The industry's performance has not changed significantly in 2000-2001. There were no observable attempts to adjust the operational structure to meet market requirements.

Tariffs are still below cost covering levels, even inflation adjustments occur only after a significant time delay. According to official statistics, tariffs on water supply and sewage covered costs in only 13 out of 27 regions, in some regions they are as low as 50% below cost. However, these figures must be interpreted with caution, since the methodology of tariff calculation and application is neither transparent nor unambiguous[16]. Network losses did not decrease. The payment discipline of households did not significantly change: they paid UAH 1.01 bn for UAH 1.37 bn of services provided.[17] As an example, for non-payments for consumed services, Lvivoblenergo (a private power distribution company) was going to disconnect Lvivvodokanal (a company providing water supply and sewage services) from its power supply, but so far did not do so for environmental reasons.

Graph 4
Household debts for water supply and wastewater services



Source: Ministry of Economy of Ukraine

3.6.3 Prospects

There is an urgent need for reforms in the water and sewage industry. Otherwise, increasing inefficiencies in the industry will result in sharp

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16 The estimated per capita consumption figure used in tariff calculations varies substantially between different regions (from 5.4 m^3 per capita in Chernivetska oblast to 12.1 m^3 in Charkiv oblast). Even in regions where 100% cost-coverage was reported, the per capita tariff varies between UAH 1.65 and UAH 6.59.

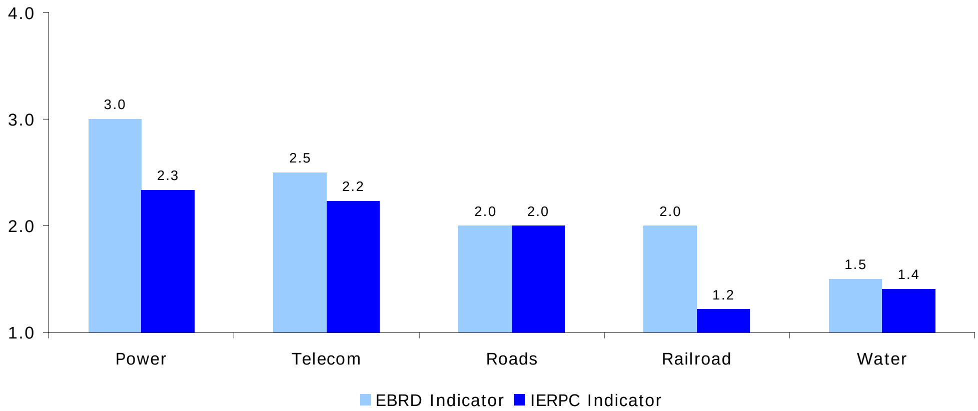
17 Source: Ministry of Economy of Ukraine.

increases of negative social and environmental consequences in the very near future, particularly as a result of pipeline breakage and leakage. Nevertheless, restructuring of the industry, which would have to be accompanied by unpopular measures such as tariff increases and 100% payment enforcement for consumed services is unlikely to happen very soon, especially taking into account that there will be parliamentary elections at the beginning of 2002.

4 Comparison of indicators

The indicators of Appendix 1 are presented in graphic form in Graph 5 below. As we can see the IERPC indicators are lower than the EBRD indicators. Higher levels of discretion in the IERPC indicators allow us to conclude that the EBRD indicators over-estimate the progress of infrastructure reforms in Ukraine.

Graph 5
Infrastructure policy evaluation in 2000



Source: EBRD Transition Report and our estimates

The differences in the calculated indicators should be treated with caution, since the methodologies are not identical:

1. The scale values are different:

   EBRD uses 4~A, 3.5~B+, 3.0~B, etc., 1~D, while

   IERPC uses to the U.S. Grade Point Average principle (4~A, 3.7~A-, 3.3~B+, etc., 1~D).

2. EBRD's indicators are based on only one estimation, while IERPC's indicator is the mean of 21 indicators.

3. Key performance and legislation implementation indicators are incorporated in the IERPC's calculations.

4. The IERPC applies universal criteria to all industries, while the EBRD criteria are specific for each industry.

The EBRD's over-estimation of infrastructure reforms in Ukraine raises the question of whether the current EBRD methodology on infrastructure reform progress could be improved by taking into account other aspects, such as poor law enforcement, payment arrears, barter and mutual settlements, and by allowing higher levels of discretion in the estimations.

The discrepancy between the estimations will not be a source of much concern as long as both sets of estimations are consistent. However, law enforcement and payment arrears problems are expected to be much lower in the Central European countries, especially in the first group of EU accession countries. Thus, infrastructure reform indicators may be over-estimated for Eastern European countries, which raises the question of consistency of the EBRD indicators.

We think that both the developers of the EBRD indicators and ourselves would agree that the infrastructure reform indicators could still be improved for research purposes. Major improvements to be made to the existing EBRD infrastructure indicators are the introduction of indicators reflecting reform implementation as well as the introduction of major actual performance indicators.

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6 Appendices

Appendix 1.
Infrastructure Indicator evaluation

	Indicator	Aspect		Telecom			Railroad			Roads			Power			Gas			Water		
				1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001	1999	2000	2001
	EBRD indicator			**2.5**	**2.5**		**1.5**	**2.0**		**1.5**	**2.0**		**2.5**	**3.0**					**1.5**	**1.5**	
	IERPC indicator				**2.2**	**2.3**		**1.2**	**1.3**		**2.0**	**2.0**		**2.3**	**2.5**		**1.8**	**1.9**		**1.4**	**1.4**
1	**Commercialization and privatization**		**1**		**2.0**	**2.0**		**1.2**	**1.4**		**1.9**	**2.0**		**2.4**	**2.5**		**1.7**	**1.8**		**1.3**	**1.3**
1.1	**Ownership**		**1.1**		**1.9**	**1.9**		**1.1**	**1.2**		**2.0**	**2.0**		**2.2**	**2.3**		**1.9**	**1.9**		**1.0**	**1.0**
1.1.1		Natural monopoly	1.1.1		1.0	1.0		1.0	1.0		1.0	1.0		3.0	3.3		1.7	1.7		1.0	1.0
1.1.2		Potentially competitive businesses	1.1.2		2.7	2.7		1.0	1.0		2.7	2.7		2.3	2.3		2.7	2.7		1.0	1.0
1.1.3		Ancillary businesses	1.1.3		2.0	2.0		1.3	1.7		2.3	2.3		1.3	1.3		1.3	1.3		1.0	1.0
1.2	**Operation**		**1.2**		**1.8**	**1.9**		**1.2**	**1.4**		**1.6**	**1.8**		**2.5**	**2.6**		**1.4**	**1.8**		**1.3**	**1.3**
1.2.1		Natural monopoly	1.2.1		1.7	2.0		1.3	1.3		1.3	1.7		3.0	3.3		2.0	2.0		2.0	2.0
1.2.2		Natural monopoly planning and investment decisions	1.2.2		2.0	2.0		1.0	1.3		1.7	1.7		2.7	2.7		1.0	2.0		1.0	1.0
1.2.3		Private sector participation in service contracts	1.2.3		1.7	1.7		1.3	1.7		1.7	2.0		1.7	1.7		1.3	1.3		1.0	1.0
1.3	**Organizational structure**		**1.3**		**2.2**	**2.2**		**1.4**	**1.6**		**2.2**	**2.2**		**2.5**	**2.5**		**1.9**	**1.9**		**1.6**	**1.6**
1.3.1		Separation of natural monopoly and potentially competitive businesses	1.3.1		2.3	2.3		1.0	1.0		3.3	3.3		3.7	3.7		2.0	2.0		1.0	1.0
1.3.2		Separation of ancillary businesses	1.3.2		2.0	2.0		1.3	1.7		2.0	2.0		1.3	1.3		1.7	1.7		1.0	1.0
1.3.3		Decentralization	1.3.3		2.3	2.3		2.0	2.0		1.3	1.3								2.7	2.7
2	**Tariff reform**		**2**		**2.4**	**2.4**		**1.2**	**1.3**		**2.0**	**2.0**		**2.2**	**2.6**		**2.0**	**2.3**		**1.8**	**1.8**
2.1	**Structure of tariffs**		**2.1**		**2.3**	**2.4**		**1.0**	**1.0**		**2.0**	**2.0**		**2.7**	**2.7**		**2.2**	**2.2**		**1.5**	**1.5**
2.1.1		Political vs. regulated operator's	2.1.1		2.0	2.0		1.0	1.0		1.7	1.7		3.0	3.0		2.0	2.0		1.0	1.0
2.1.2		Natural monopoly pricing	2.1.2		2.3	2.3		1.0	1.0		1.7	1.7		2.7	2.7		2.3	2.3		1.7	1.7
2.1.3		Potentially competitive businesses pricing	2.1.3		2.7	3.0		1.0	1.0		2.7	2.7		2.3	2.3		2.3	2.3		1.7	1.7
2.2	**Payments**		**2.2**		**2.8**	**2.9**		**1.4**	**1.7**		**2.4**	**2.2**		**1.9**	**3.1**		**1.9**	**2.7**		**1.8**	**2.0**
2.2.1		Intraindustry payments ratios	2.2.1		2.3	2.3		1.3	1.7		2.7	2.7		2.0	3.0		2.0	2.0		2.0	2.0
2.2.2		Final consumers collection ratios	2.2.2		3.0	3.3		2.0	2.3		2.7	2.7		2.0	3.0		2.0	2.7		1.7	1.7
2.2.3		Budget indebtedness	2.2.3		3.0	3.0		1.0	1.0		1.7	1.3		1.7	3.3		1.7	3.3		1.7	2.3
2.3	**Budgetary funding**		**2.3**		**2.0**	**2.0**		**1.3**	**1.3**		**1.7**	**1.7**		**2.0**	**2.0**		**2.0**	**2.0**		**2.0**	**2.0**
2.3.1		Subsidies level	2.3.1		2.3	2.3		1.3	1.3		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
2.3.2		Subsidies procedure	2.3.2		1.7	1.7		1.3	1.3		1.3	1.3		2.0	2.0		2.0	2.0		2.0	2.0
3	**Regulatory and institutional development**		**3**		**2.4**	**2.4**		**1.2**	**1.2**		**2.0**	**2.0**		**2.4**	**2.4**		**1.5**	**1.6**		**1.2**	**1.2**
3.1	**Effective regulatory institution**		**3.1**		**2.4**	**2.6**		**1.3**	**1.4**		**1.9**	**2.0**		**2.6**	**2.6**		**1.8**	**1.9**		**1.3**	**1.3**
3.1.1		Management selection of competitive businesses	3.1.1		2.7	2.7		1.3	1.3		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0
3.1.2		Independence of regulator, insulation from political	3.1.2		2.3	2.7		1.0	1.0		2.0	2.0		2.7	2.7		2.0	2.0		1.0	1.0
3.1.3		Transparency of regulation	3.1.3		2.3	2.3		1.7	2.0		1.7	2.0		3.0	3.0		1.3	1.7		1.0	1.0
3.2	**Access regulation**		**3.2**		**2.3**	**2.3**		**1.0**	**1.0**		**2.0**	**2.0**		**2.3**	**2.3**		**1.3**	**1.3**		**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 score of one means that the natural monopoly is state owned; the score increases with disintegration, corporatisation and privatisation of the natural monopoly. The maximum score is reached with wholly private ownership.

1.1.2 **Potentially competitive business.** As with the previous indicator a score of one implies that the businesses are part of the state owned natural monopoly. The score increases with separation, corporatisation and privatisation. The maximum is reached when all the businesses are in private ownership.

1.1.3 **Ancillary business.** A score of one means that the businesses are state owned. The score increases with the degree of separation and privatisation.

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, while an independent regulator is established. The maximum score is assigned if the natural monopoly is managed by a private company 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 increase. The highest score applies if network extensions and new investment projects are realised solely due to profitability considerations.

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 fields 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 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 business from the natural monopoly or potentially competitive businesses. The score increases together with the degree of separation. The maximum score is assigned when the natural monopoly and potentially competitive businesses on the one hand and ancillary businesses on the other are completely separated.

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

2 Tariffs 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. 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 cost reflecting levels and cross-subsidisation declines.

2.1.3 **Potentially competitive businesses pricing.** A score of one means a lack of cost reflective pricing. The score increases with price formation according to competitive market principles.

2.2 Payments

2.2.1 **Intra-industry payment ratios.** A score of one implies that arrears are constantly accumulating and transactions are basically non-monetary. The score increases as monetary settlements are carried out and arrears are gradually declining to zero.

2.2.2 **Final consumer collection rates.** A score of one means low revenue collection from final consumers (households and enterprises) and constantly accumulating arrears. The score increases as progress with revenue collection is made and services are fully paid for.

2.2.3 **Budget indebtedness.** A score of one corresponds to budget arrears for services consumed by the state and to indebtedness for budgetary compensations for privileged consumers. The score is improves as this indebtedness reaches zero.

2.3 Budgetary 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. For instance, the government may pursue a constant practice of debt forgiveness and restructuring. Abstention from implicit and explicit subsidies leads to improvement of the score.

2.3.2 **Subsidies procedure.** A score of one is assigned when the subsidy is directed to services suppliers and is 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 of competitive businesses.** A score of one means that the management is appointed by state officials. The score increases when the management is elected by the shareholders and reaches 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 where the service is operated as a government department. 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 regulation.** A score of one implies an absence of legislation defining clear rules for business conduct and for the obligations of government bodies. The score increases with the development of legislation and its enforcement, and with public decision making. It reaches the maximum when the performance of natural monopolies in an industry is regulated only by an independent regulator in accordance with law, and all decisions are disclosed.

3.2 Access pricing regulation method. A score of one means that the access right is arbitrarily determined by the state. The score increases if the access is regulated by an independent regulator, later negotiated, finally determined by tender.

Appendix 3. Explanations for the infrastructure indicator evaluations given in Appendix 1

Telecommunications

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 2000 and 2001: The fixed communication lines are 100% state owned.

1.1.2 2000 and 2001: The domestic phone company is 100% state owned, the international operator is corporatised and 49% privatised, most mobile operators and internet providers are private owned and competing with each other.

1.1.3 2000 and 2001: The social infrastructure was split off, fixed line construction and maintenance is provided by publicly owned companies.

1.2 Operation

1.2.1 2001: The State Committee for Telecommunications and Information is actively involved in restructuring and regulating the industry, including support of legal suits against a fixed lines operator using its monopoly power.

1.2.2 2000 and 2001: The fixed lines operation generates profits, although network extension is the only priority. The fibre-optic cable network is developing.

1.2.3 2000 and 2001: Fixed line construction and maintenance is managed by a public fixed line operator, the mobile network is developed by private operators.

1.3 Organisational structure

1.3.1 2000 and 2001: The network operations and phone user services are integrated, telecommunication and post service are managed by separate government bodies.

1.3.2 2000 and 2001: The social infrastructure was split off, but other services are not contracted out yet.

1.3.3 2000 and 2001: Both long distance and local phone services are highly centralised; mobile services operate on a regional basis.

2 Tariffs reform

2.1 Structure of tariffs

2.1.1 2000 and 2001: Telecommunications tariffs are regulated, but set by the fixed lines operator.

2.1.2 2000 and 2001: Local calls are subsidised by long distance calls, for fixed phone lines user charges persists.

2.1.3 2001: Telephone tariffs became more flexible, by-the-minute charges have been introduced, mobile telecommunications charges are going down.

2.2 Payments

2.2.1 2000 and 2001: Phone usage is normally paid for, barter operations are reduced.

2.2.2 2001: Phone debt is decreasing due to better enforcement of the law.

2.2.3 2000 and 2001: The indebtedness level is low but is still not eliminated.

2.3 Budgetary funding

2.3.1 2000 and 2001: Notwithstanding the attempts to reduce the number of privileged categories of phone users the subsidy level is still substantial.

2.3.2 2000 and 2001: Subsidies are paid to the fixed phone line operator.

3. Regulatory and institutional development

1.1 Effective regulatory institutions

1.1.1 2000 and 2001: The management is selected by shareholders, although for major state owned operators the government's involvement remains substantial.

1.1.2 2001: The State Committee for Telecommunications and Information turns into an independent government body regulating the telecommunications industry.

1.1.3 2000 and 2001: According to the legislation, tariffs and access regulation principles did not change, decisions on changes are being openly discussed.

3.2 Access regulation 2000 and 2001: Access is provided by spectrum allocation tenders and operations licensing.

Railways

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 2000 and 2001: All rail lines are 100% state property.

1.1.2 2000 and 2001: Passengers and freight transportation is 100% state property.

1.1.3 2000 and 2001: Construction, maintenance and service enterprises are being privatised.

1.2 Operation

1.2.1 2000 and 2001: Railways are regulated by the State Railways Administration, which is integrated into the Ministry of Transport.

1.2.2 2001: Capacity adjustment has started, several railway stations are closed down.

1.2.3 2000 and 2001: Rail line construction and rolling stock maintenance is provided by enterprises being privatised.

1.3 Organisational structure

1.3.1 2000 and 2001: The railway infrastructure, passenger and freight transportation services are integrated.

1.3.2 2001: Social infrastructure separation and services contracting starting slowly.

1.3.3 2000 and 2001: Railways are split into 6 regional companies each with the right to set tariffs independently for their services. Municipal authorities may regulate privileged category tariffs while providing offsetting compensation.

2 Tariffs reform

2.1 Structure of tariffs

2.1.1 2000 and 2001: Political criteria determine railways transportation service tariffs.

2.1.2 2000 and 2001: Fixed costs are not covered, cross subsidisation of passenger transportation with freight transportation persists.

2.1.3 2001: Tariffs do not reflect infrastructure and rolling stock costs, also they do not create incentives for efficient rolling stock utilisation.

2.2 Payments

2.2.1 2001: Arrears and mutual settlements are reducing, payment arrears are modest, mutual settlements are extensive.

2.2.2 2001: Final consumer indebtedness for freight is relatively small and reducing.

2.2.3 2000 and 2001: The budget indebtedness level is large and persisting.

2.3 Budgetary funding

2.3.1 2000 and 2001: Notwithstanding attempts to reduce the number of privileged categories of passengers the subsidy level is still substantial.

2.3.2 2000 and 2001: Subsidies are paid to the railways (service providers).

3 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 2000 and 2001: The management is appointed by the government, although the government body operating the railways is formally independent.

3.1.2 2000 and 2001: The railways regulator is a part of the government and integrated with the rail line operator.

3.1.3 2000 and 2001: Tariffs are fixed by legislation, 2001: tariffs changes are publicly discussed.

3.2 Access is regulated with government permissions.

Roads

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 2000 and 2001: All roads are 100% state property.

1.1.2 2000 and 2001: Freight transportation enterprises are mostly private, passenger transportation enterprises are mostly public.

1.1.3 2000 and 2001: The social infrastructure, services, and automobile maintenance enterprises are mostly private, while roads maintenance and construction is provided by publicly owned companies with few exceptions.

1.2 Operation

1.2.1 2000 and 2001: Roads are managed by a government department, road network extensions and regulation are the responsibility of a state agency (Ukrautodor).

1.2.2 2000 and 2001: The road network extension is the only priority, efficiency is not taken into account.

1.2.3 2000 and 2001: Road construction and maintenance is provided by companies being privatised, although contracts are still placed in non-transparent ways.

1.3 Organisational structure

1.3.1 2000 and 2001: Road operations are split off from freight and passenger transportation services.

1.3.2 2000 and 2001: Road construction, operation and maintenance is separated from transportation, some services are contracted out; truck and bus maintenance is separated from transportation in a few cases.

1.3.3 2000 and 2001: Roads are financed and operated at both the central and regional levels. Municipal authorities can make investment decisions on local roads construction although in reality they usually lack funds.

2 Tariffs reform

2.1 Structure of tariffs

2.1.1 2000 and 2001: Tariffs for passenger transportation are set by the government.

2.1.2 2001: Officially, road funding derives from an excise tax on fuel, although the law is not yet enacted. The tax is directed to the general state budget, the cross subsidisation level is low.

2.1.3 2000 and 2001: The trucking and bus transportation markets are competitive, licensing procedures are complicated.

2.2 Payments

2.2.1 2000 and 2001: Payment arrears between enterprises are modest, roads are under-invested.

2.2.2 2000 and 2001: Payment arrears by final consumers are modest, though they persist in urban transportation.

2.2.3 2001: The budget indebtedness is large and continues to increase.

2.3 Budgetary funding

2.3.1 2000 and 2001: Notwithstanding attempts to reduce the number of privileged categories of passengers the subsidy level remains substantial.

2.3.2 2000 and 2001: Subsidies are paid to the road operator.

3 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 2000 and 2001: Only the management of the roads operator is appointed by the government.

3.1.2 2000 and 2001: Ukrautodor as roads operator is organisationally separated from the government.

3.1.3 2001: Tariff regulation principles are publicly discussed, but only whenever a state budget is being adopted.

3.2 Access regulation 2000 and 2001: Access is regulated by licensing, although procedures are non-transparent.

Power

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 2000: Controlling interests for 7 regional distribution companies (oblenergos) were sold and 3 were partly privatised (out of 27) in 2000.

2001: Controlling interests for 6 oblenergos[18] were sold in April. The privatisation procedure was made transparent by hiring an external advisor.

1.1.2 2000 and 2001: The nuclear, hydro and fossil fuel generating plants were separated into different companies but remain 100% state property (the percentage of power generated by private fossil fuel plants is negligible).

1.1.3 2000 and 2001: The social infrastructure, construction and maintenance are treated as part of the natural monopoly.

[18] Two of them were partly privatised before April.

1.2 Operation

1.2.1 2000 and 2001: Regional distribution companies are stock companies and some of them in private hands, all are regulated by the NERC. Privatisation should increase. The grid is operated as a part of Ukrenergo.

1.2.2 2000 and 2001: Decision making is still politically influenced but decreased in 2001 due to pressure from private investors (guaranteed profitability).

1.2.3 2000 and 2001: Construction and maintenance is managed by the oblenergos.

1.3 Organisational structure

1.3.1 2000 and 2001: Generation, transmission and distribution are separated into independent companies

1.3.2 2000 and 2001: Minimal degree of separation.

1.3.3 Decentralisation is not a high priority in this industry.

2 Tariffs reform

2.1 Structure of tariffs

2.1.1 2000 and 2001: Political interference in tariff setting for certain types of consumers persists through pressure exerted on the independent regulator.

2.1.2 2000 and 2001: Cross subsidisation of households and of closing coal mines by industry still takes place and cost reflection is not unambiguous.

2.1.3 2000 and 2001: The performance of the wholesale electricity market is far removed from market requirements.

2.2 Payments

2.2.1 2000: Oblenergo payments for electricity were settled in non-cash form,

2001: The situation improved significantly, but some settlements are still made in non-cash form.

2.2.2 2001: The collection rate increased significantly compared to 2000 especially in monetary form, however, it remains below 100%

2.2.3 2001: The state budget foresees 100% payment for consumed power whereas in 2000 the level of budget indebtedness increased.

2.3 Budgetary funding

2.3.1 2000 and 2001: Debt forgiveness and debt restructuring take place, the poorest people are subsidised.

2.3.2 2000 and 2001: Subsidies are paid to the oblenergos.

3 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 2000 and 2001: The management is appointed by the state

3.1.2 2000 and 2001: The NERC is governed by decrees from the President and the Cabinet of Ministers, there is no law defining its rights and obligations. During the first half of 2000 it reported to the Ministry of Fuel and Energy, then to the Cabinet of Ministers and in 2001 to the President.

3.1.3 2000 and 2001: Tariffs are set according to a fixed methodology, however, there remains strong political interference in the decision making process.

3.2 Access regulation 2000 and 2001: Access is regulated by the NERC, but without a legislative base.

Gas

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 2000 and 2001: Trunk pipeline and distribution pipes are 100% state property, however, NakNaftogaz is corporatised.

1.1.2 2000 and 2001: The share of state property in gas extraction is very high, private companies have been involved in gas import.

1.1.3 2000 and 2001: Construction, maintenance and service efforts are carried out by NakNaftogaz.

1.2 Operation

1.2.1 2000 and 2001: NakNaftogaz is subject to supervision by the government and the President, can however operate as a market company.

1.2.2 2000 and 2001: Commercial objectives are weak, however, commercialisation increased in 2001 and debt accumulation for consumed Russian gas was stopped, as was illegal siphoning.

1.2.3 2000 and 2001: Construction and maintenance are carried out by Nak Naftogaz, but the private sector is involved in gas deliveries to enterprises.

1.3 Organisational structure

1.3.1 2000 and 2001: NakNaftogaz was split into extraction, transportation and sales.

1.3.2 2000 and 2001: Minimal degree of separation.

1.3.3 Decentralisation is not foreseen for this industry.

2 Tariffs reform

2.1 Structure of tariffs

2.1.1 2000 and 2001: There is still government interference in tariff setting for some types of consumers.

2.1.2 2000 and 2001: Industrial enterprises have choices, though Nak Naftogaz determines the price of transportation. Households and utilities are invoiced at below-cost prices; as a result under-investment in the network persists.

2.1.3 2000 and 2001: A substantial part of gas imports is carried out by a private company.

2.2 Payments

2.2.1 2000 and 2001: Arrears, non-payments and problems associated with them are substantial.

2.2.2 2000 and 2001: Final consumer indebtedness for gas is substantial, but in 2001 the payment collection rate increased and the debt for consumed Russian gas has not increased. Supply to households and utilities in 2001 depends to a large extent on their payment behaviour.

2.2.3 2000 and 2001: The budget indebtedness level is substantial, but the state budget for 2001 envisages full payment for government consumption.

2.3 Budgetary funding

2.3.1 2000 and 2001: The poorest households are subsidised, debt restructuring and debt delay for enterprises persist.

2.3.2 2000 and 2001: Subsidies are paid to the public sector.

3 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 2000 and 2001: The management is appointed by the government, although NakNaftogaz is formally independent.

3.1.2 2000 and 2001: NakNaftogaz is subject to government control.

3.1.3 2000 and 2001: Industrial enterprises can buy gas at auctions, distribution costs and the price of gas obtained as a transit fee for Russian gas is non-transparent.

3.2 Access regulation 2000 and 2001: Access is regulated by Nak Naftogaz.

Water and wastewater

1 Commercialisation and privatisation

1.1 Ownership

1.1.1 2000 and 2001: Natural monopoly (water distribution and drainage systems) under state ownership.

1.1.2 2000 and 2001: Potentially competitive businesses (water supply and wastewater treatment) too is in the state ownership

1.1.3 2000 and 2001: Construction and maintenance are part of the natural monopoly.

1.2 Operation

1.2.1 2000 and 2001: Water and wastewater services are provided by one company

1.2.2 2000 and 2001: Strong political influence in decision making still persists.

1.2.3 2000 and 2001: Private sector participation in service contracts is practically nil.

1.3 Organisational structure

1.3.1 2000 and 2001: No separation

1.3.2 2000 and 2001: No separation.

1.3.3 Companies perform under the supervision of municipal authorities. However, intervention by the regional administrations is often the case.

2 Tariffs reform

2.1 Structure of tariffs

2.1.1 2000 and 2001: Tariffs are set by municipal officials, primarily in accordance with political considerations.

2.1.2 2000 and 2001: Tariffs are at below-cost levels. Natural monopolies charge all costs to consumers and have no incentives for minimising costs.

2.1.3 2000 and 2001: Potentially competitive businesses are part of the natural monopoly, which sets prices for all services.

2.2 Payments

2.2.1 2000 and 2001: Payment arrears are significant due to the low collection rate.

2.2.2 2000 and 2001: Collection rates remain at a low level.

2.2.3 2001: The state budget envisages 100% payment for consumed power whereas in 2000 the level of budget indebtedness increased.

2.3 Budgetary funding

2.3.1 2000 and 2001: Debt forgiveness and debt restructuring take place.

2.3.2 2000 and 2001: The water supply and sewage companies are subsidised.

3 Regulatory and institutional development

3.1 Effective regulatory institutions

3.1.1 2000 and 2001: The management is appointed by the state

3.1.2 2000 and 2001: There is no independent regulator

3.1.3 2000 and 2001: Tariffs are set arbitrarily, justifications for the decisions are not disclosed.

3.2 Access regulation 2000 and 2001: There are no rules for access