

IMF PAPER ON POLICY ANALYSIS
AND ASSESSMENT

© 1996 International Monetary Fund

This is a *Paper on Policy Analysis and Assessment* and the author(s) would welcome any comments on the present text. Citations should refer to a *Paper on Policy Analysis and Assessment* of the International Monetary Fund, mentioning the author(s) and the date of issuance. The views expressed are those of the author(s) and do not necessarily represent those of the Fund.

PPAA/96/3

INTERNATIONAL MONETARY FUND

European II Department

*Ukraine's Gas Arrears: Issues and Recommendations */*

by

Amer Bisat

April 1996

Abstract

This paper discusses issues related to the gas arrears 'crisis' in Ukraine. It concludes that the problem, which can be traced to policy distortions, can be contained through an acceleration of structural reforms. The paper examines the nature of the contractual relations between Ukraine and its foreign suppliers; the role of the *de facto* government guarantee for gas import payments; the process of imposing financial discipline on non-payers; the nature of gas-related subsidy schemes; and the methods used in calculating domestic energy prices. An Appendix derives lessons from the Estonian case—an economy which, despite relatively similar initial conditions, avoided the emergence of energy payment difficulties.

JEL Classification Nos.:
E65, H20, L95, P20

*/ This paper benefitted from comments by, and discussions with Messrs. Odling-Smee, Brau, Knöbl, Lorie, Berengaut, Lenain, Zavoico, Ghosh, and Gray. The usual disclaimer applies.

<u>Contents</u>	<u>Page</u>
I. Introduction and summary	1
II. External arrears	4
1. Contractual relations	4
2. Government guarantees	5
3. Policy recommendations	6
III. Domestic arrears	8
1. Nonpayment by end-users and financial discipline	8
2. Gas-related subsidies	11
3. Definition of "cost recovery" levels	12
4. Policy recommendations	13
IV. Conclusions and Long-term Issues	13
 <u>Appendices</u>	
I. Structure of the Ukrainian Gas Sector	16
II. Ukraine—government Guarantee for Gas Import Payments	20
III. Ukraine—Gas Related Government Subsidies	22
IV. Structure of the Ukrainian Heating Sector	24
V. Energy Arrears—Lessons from the Estonian Experience	26
 <u>Tables</u>	
1. Ukraine: Domestic and External Gas Arrears; 1993-94	2
2. Ukraine: Energy Utility Price Increases Relative to Wage Increases; 1992-94	9
3. Ukraine: Energy Arrears—Summary of Recommended Measures	15
4. Estonia: Energy Related Arrears; 1993-94	31

I. Introduction and Summary

Since the dissolution of the USSR, Ukraine has experienced a large buildup of domestic and external payment arrears much of which has been associated with the gas sector ^{1/}. After reaching nearly US\$ 1 billion at end-1993, external arrears peaked at US\$ 1.5 billion at end-1994 and resulted in a rescheduling agreement with Russia and Turkmenistan (Table 1). During the first half of 1995, Ukraine accumulated a further US\$0.4 billion in arrears that were also largely subject to a second round of restructuring; however, the stock of external arrears declined by US\$0.2 billion during the second half of the year. The stock of domestic arrears--which, in the Ukrainian context, is closely associated with external arrears--was equivalent to 6 and 5 percent of GDP at the end of 1993 and 1994, respectively. The pace of domestic gas arrears accumulation quickened during the first half of 1995 with the increase during each of the first and second quarters amounting to 10 and 7.5 percent of the respective quarter's GDP. The flow of arrears accumulation declined significantly during the third quarter and amounted to less than 1 percent of GDP. This improvement was partly explained by seasonal factors ^{2/}, but also resulted from recent actions taken by the government against delinquent payers; the latter included shutting-off of gas supplies to hundreds of non-payers.

In addition to their microeconomic consequences (e.g. postponing enterprise restructuring, resource misallocation), gas arrears have threatened macroeconomic stability by contributing to tax arrears ^{3/}; becoming contingent liabilities of the government; and by forcing the budget to extend resources and/or borrow from foreign creditors.

^{1/} Appendix I provides an overview of the Ukrainian gas sector. This paper focuses on gas--as opposed to energy--arrears as those have been much more significant than arrears on petroleum payments. Two factors appear to explain this asymmetry. First, oil is a traded good that can be physically transferred from a delinquent customer to a paying one. In other words, oil's opportunity cost is much higher than that of gas. Second, for reasons whose examination is beyond this paper's scope, FSU governments have been less involved in the oil sector than in the gas sector.

^{2/} Those include the end of the heating season and the annual cutting of hot water for maintenance purposes.

^{3/} The overdue receivables held by energy enterprises prompted them to withhold tax payments. In parallel, non-energy companies who were delinquent on their energy payments tended to also be overdue on their tax bills.

Table 1. Ukraine: Domestic and External Gas Arrears; 1994-95
(End of period; In trillions of Karbovanets unless otherwise indicated)

	1993		1994		1995		
	December	June	December	March	June	September	December 1/
Domestic stock	9.7	19.9	56.8	132.8	215.1	228.9	289.3
Government	...	...	27.5	68.8	102.8	...	...
State budget	...	...	16	23.2	...	...	...
Community services & budgetary organizations.	...	...	11.5	45.6	...	...	...
Economy	...	...	29.3	64	112.3	...	...
Ministry of Energy	...	...	4.8	20.9	36.4	42.8	55.9
Ministry of Industry	...	...	13.3	24.4	38.5	42.3	54.6
Ministry of Machine-building	...	...	10	11.5	13.7	15.6	19.6
Other	...	...	1.2	7.2	23.7	...	...
External stock (bn US\$) 2/	0.26	1.10	1.50	0.36	0.38	0.18	0.18
Memorandum items							
Domestic stock (bn. US\$)	0.768	1.138	0.545	1.021	1.52	1.339	1.625
Domestic flow/period's GDP 2/	6.32	3.04	4.61	9.76	7.54	0.93	...

1/ For domestic arrears, data as of November 16.

2/ For 1995, data reflect debt restructuring deal with Russia.

2/ For 1993, the flow is for the complete year; for 1994, the flow is for half-year; for 1995, the flow is for each quarter.

Source: Ukrainian authorities.

This paper traces the policy distortions that are associated with the arrears 'crisis'. On the external side, the paper examines the contractual relations between Ukraine and its gas suppliers and judges that more transparency and preciseness is needed in the contracting process. The paper also looks at the role of the government in the gas importing process and concludes that there is a need to credibly remove the government's *defacto* guarantee for gas import payments.

Regarding the domestic side of the gas arrears problem, the paper identifies the four causes of non-payment by end users: i) the deteriorating ability of households to pay; ii) the moral hazard problem associated with an intensive government role; iii) the difficulties encountered by the enterprise sector which, in addition, still faces soft budget constraints; and iv) the weak collection efforts by energy companies which are compounded by problems of energy theft and under-reporting. A general solution to the above causes is the imposition of financial discipline which would require, as a prerequisite, the depoliticization of decisions to shut-off gas supplies to nonpayers. Since during transition to a market economy, energy users (both households and enterprises) may (legitimately) be unable to pay their energy bills, the imposition of financial discipline needs to be coupled with the introduction of a safety net, and by speeding-up the process of enterprise restructuring and privatization.

Domestic gas arrears in Ukraine are also related to the many gas subsidy schemes currently in place. The paper details those schemes and recommends that energy tariffs be rapidly moved to (properly defined) cost recovery levels; that the open-ended energy price-subsidy system be replaced by a targeted social safety net whose recipients are the households themselves; and that user-fees for services offered by budgetary organizations (e.g. schools and hospitals) be introduced.

The paper also examines the official definition of what constitutes energy "cost-recovery" levels in Ukraine. It notes that distortions inherent in this definition have caused the accumulation of inter-energy sector arrears.

The paper concludes with a list of longer-term measures for improving the efficiency and market orientation of the energy sector.

II. *External Arrears*

1. *Contractual relations*

In general, the contractual relations between UkrGasProm (UGP) and Rao GasProm (RGP) 1/ appear to lack specificity and transparency which has encouraged disputes and payment delays. Two particular areas stand out. First, there is vagueness about documentation and procedures that are necessary for a precise determination of contractual obligations. The two parties rely heavily on oral discussions and past practices. Second, the relations "mesh" gas prices with transmission fees: gas prices are well below what Russia charges Western European customers; however, pipeline transmission fees (for Russian gas deliveries to the Western European market) are also significantly less than the cost UGP incurs. 2/ Which of the two discounts dominates depends on the volume of gas delivered to the Ukrainian market and the volume of the gas transmitted to the Western European market 3/.

At present, gas delivery contractual relations do not allow for delayed payments beyond the very short-term (i.e. one month). While this tight condition has been prompted by Ukraine's payment track record, it has periodically placed the gas importing companies under severe financial strain. For instance, while domestic gas usage peaks in the winter and tapers off in the summer, contractual payments are in regular and equal installments. Ukraine would most probably eventually want financial relations to develop on normal commercial terms similar to those pursued in Western Europe. These include, in particular, the extension of trade financing. "Normal" payment cycles, however, necessitate that the Ukrainian gas import companies establish creditworthiness. This can be done in stages: initially, the companies would pre-pay for their gas

1/ UkrGasProm is the Ukrainian Government-owned company responsible for production, import, and transmission of gas from Russia to Western Europe. Rao GasProm is the Russian gas company in charge of production, export, and domestic distribution of Russian gas.

2/ "Cross subsidization" may also be present in the storage fees and the in-kind payments made by UGP. We have insufficient quantitative information to make a precise assessment.

3/ Transmission fees have, in the past, been renegotiated in cases where the volumes of delivered gas differ from the indicative amounts specified in the contract.

deliveries; they could then "purchase" payment guarantees from established Western commercial banks; finally, they would directly obtain trade financing from their external gas suppliers.

2. *Government guarantees*

De jure, the Ukrainian Government does not guarantee gas import payments; however, through precedent and intensive involvement in the process of gas imports, it *de facto* acts as a guarantor. In particular, the requirements for an official guarantee, as defined by the Ukrainian law, are not satisfied. ^{1/} However, on two occasions, the GOU has acted in a fashion analogous to that of a formal guarantor: in December 1994, and April 1995, it entered into arrears-rescheduling agreements with Russia and Turkmenistan that explicitly assumed the overdue liabilities of the gas importing companies.

The GOU's role as an (implicit) guarantor of gas payments has had the beneficial impact of preserving regularized financial relations between Ukraine and its gas suppliers. However, the guarantee policy caused two serious distortions. First, the policy had serious fiscal implications: as importing companies ran arrears against foreign suppliers, the government assumed the liabilities, accumulated massive long-term debt, and incurred large budgetary outlays. The second distortion relates to the moral hazard problem generated when gas users, realizing that the government would eventually bail them out, developed minimal incentives to pay their gas bills. In a similar vein, suppliers had no motivation to ascertain the final users' 'creditworthiness' and ability-to-pay as a precondition to delivering gas.

Recognizing the above distortions, and consistent with the letter of the Ukrainian law, the GOU formally (and publicly) announced that it will no longer guarantee external gas payments and that it is the

^{1/} See Appendix II for a description of the Government's guarantee role. A similar situation exists with regard to the Turkmen gas-delivery contract.

importers themselves who are liable for their external arrears. 1/ In and of itself, this policy of "no government guarantee" will not solve the problem of gas arrears: so long as domestic users do not pay their gas bills, gas importers will eventually accumulate external arrears. However, an effective removal of guarantees will remove the budget from the arrears problem, and, as other countries' experience demonstrates, will provide gas companies with an incentives to strengthen their domestic payment collection efforts. 2/

The benefits of a "no guarantees" policy will be reaped only if it is effectively implemented in practice. Otherwise, domestic gas users would treat the policy as a hollow threat; moreover, the incentive not to pay as well as the dis-incentive to seriously collect gas payments would remain in place. The problem, however, is that there are legitimate reasons for users not to take the "no guarantee" at face value. They recognize that gas is a vital fuel for the economy (including for heat) and that the government will be under pressure to intervene when gas companies threaten to cut-off supplies to non-payers. Moreover, they also recognize that if gas importers accumulate enough external arrears, foreign policy considerations will put pressure on the government to assume the external liabilities.

3. *Policy recommendations*

To reduce the probability of disputes, it is necessary to make the terms of the gas importing contractual relations more transparent including by specifying the documentation and procedure needed for valuation of gas, and transit and storage fees. Moreover, it is necessary to have separate contracts for

1/ This announcement was in the form of two letters to Russia-Gasprom and to the Turkmenistan Cabinet of Ministers dated, respectively, September 14, and October 6, 1995. While the exact time at which the "no guarantee" policy comes into effect was left unclear in the letters, informal indications, including from RGP, led to the belief that the policy became active immediately. However, initial agreements on the 1996 deliveries (of both Russian and Turkmen gas) stipulated that the GOU remains liable for overdue payments through the end-of-1995 and that the removal of guarantees will actually come into effect only starting January 1, 1996.

2/ A relevant similarity is to the government guarantee of banking operations. Experience shows that the removal of such guarantees has forced vigilance into banking lending activities.

delivery, transportation, and storage in which all fees and prices are specified in full. Having separate contracts is not inconsistent with having joint negotiations for delivery, transportation, and storage. Ukraine and Russia are mutually dependent on each other: Ukraine on Russian gas, and Russia on Ukrainian pipelines. Both sets of negotiations have to occur jointly if mutually satisfactory negotiating outcomes were to emerge. In addition, there is a need to seek new payment mechanisms for gas imports that are less onerous on Ukrainian import companies. This, however, would require that the companies establish their creditworthiness.

As a permanent solution, it is clear that the Ukrainian government will need to effectively remove itself from the process of importing gas. In addition to a credible implementation of the recently announced "no guarantee" policy, the GOU will have to undertake a comprehensive package that aims at solving the roots of the external arrears problem: domestic arrears. To that, we turn next.

III. *Domestic Arrears*

Domestic gas arrears in Ukraine are associated with three causes. General non-payment by gas users and the inability of gas companies to impose financial discipline; distortions in the way gas-related subsidies are provided; and the methods used to set utility tariffs. Each cause is discussed separately below.

1. *Nonpayment by end-users and financial discipline*

Non-payment by end-users remains the major factor behind domestic arrears. While a comprehensive analysis goes beyond the scope of this study, one can identify four general causes for non-payment.

- o Prices of energy inputs increased at rates much higher than the increase in households' incomes. In fact, tariffs for cooking gas, heat, and electricity rose several times faster than the growth rate of the economy's average wage (Table 2). While it is clear that households' ability to pay has considerably deteriorated, dealing with the problem should not involve open-ended price subsidies: these are extremely costly and provide little incentive for conserving energy. A lasting solution would be the introduction of a targeted social safety net.

- o Enterprises faced a severe terms of trade shock with the cost of inputs having risen manifold. Moreover, enterprises became burdened with the need to finance social expenditures previously paid for by the state ^{1/}. Adjusting to these shocks requires a restructuring effort that should involve altering the capital stock and the product mix. Enterprises, however, have been able to postpone embarking on such an effort partly because there was no hard budget constraint to put pressure on them.

^{1/} This includes i) enterprises providing energy to households located in their area; and/or ii) enterprises being charged tariffs that exceed cost-recovery levels thus cross subsidizing households' usage of energy services.

Table 2. Ukraine: Utility Tariffs Versus Wages; 1992–94
(Indices of ratio of tarriff to national average wage)

	Ratio of gas prices to wages	Ratio of elect. tariff to wages	Ratio of heat tariff to wages
1992			
Q1	100	100	...
Q2	46	153	...
Q3	30	99	...
Q4	14	46	...
1993			
Q1	125	129	...
Q2	285	65	...
Q3	416	88	...
Q4	154	75	...
1994			
Q1	87	93	...
Q2	72	113	...
Q3	59	253	100
Q4	206	377	344
1995			
Q1	827	683	429
Q2	793	653	442

Source: Ukrainian authorities.

o The all-pervasive role played by the Government (including guaranteeing gas import payments; subsidizing gas usage; intervening in decisions to cut off supplies to delinquent payers; etc.) has created a moral hazard problem associated with the knowledge that the government will eventually assume the costs of non-payment. There is a need for a credible removal of the government from the operations of the gas sector.

o Weak collection efforts by energy companies are compounded by problems of energy theft and under-reporting. Recent changes in the gas payments collection process may prove to be beneficiary; moreover, UGP's plans to limit itself to collecting from large users while "subcontracting" the collection from small users to the local gas distribution companies is a positive development (see Appendix I).

A general solution to the above set of causes involves the imposition of financial discipline. Arguments to the effect that cutting gas and heating is impossible for technical reasons are exaggerated. ^{1/} Recent actions against non-payers have born fruit. However, the main obstacle remains the politicization of the process ^{2/}. For example, Ukrainian energy companies are held liable for damage occurring to machinery that is idled by cutting-off gas supplies. To insure themselves against this liability, suppliers ask for the permission of "executive councils" of local governments before they shut supplies off. These councils, of course, are reluctant to agree. A law that shields energy suppliers is needed. The de-politicization of the process can be helped by privatizing and corporatizing energy companies who feel they can not act against their owners--the local governments.

Insofar as part of the problem is associated with a legitimate inability to pay, the imposition of financial discipline, in and of itself, may not eliminate arrears. It would need to be complemented by two sets of measures. First, households that are verifiably unable to pay should be covered by the social safety

^{1/} Appendices I and III discuss the metering of households' usage of gas and heating, respectively. The conclusion is that the ability to technically control heat and gas flows already partially exists; moreover, expanding the supply companies' ability to monitor and control flows appears financially feasible and justified by the resulting energy savings.

^{2/} This conclusion surfaces when one examines the experience of other countries which, despite relatively similar initial conditions, succeeded in avoiding the emergence of energy payment arrears. Appendix V provides lessons from the Estonian experience.

net. Second, for enterprises, a determination is necessary regarding whether the inability to pay (if confirmed) results from illiquidity or insolvency. In either cases, a program of enterprise reform would include, as necessary, bankruptcy, restructuring, and/or privatization.

2. *Gas-related subsidies*

The Ukrainian Government subsidizes certain gas-related usages. In and of themselves, subsidies do not lead to arrears; however, nearly half of the country's domestic arrears are accounted for by subsidy arrears (Table 1). Two characteristics of the way the subsidies are provided contribute to the arrears problem 1/.

First, price subsidies to the households are generally provided by local governments to gas and heat suppliers 2/. Local governments often do not pay the subsidies which results in suppliers not being able to pay their own gas bills. Since it is not the households' fault, gas and heat providers feel that they cannot cutoff supplies. Moreover, suppliers have little leverage over local governments. Actions by the State Government against delinquent local governments, while possible, are constrained by legal considerations 3/. Moreover, aggressive intervention by the State runs counter to the objective of getting the Government out of the gas business. A lasting solution is to bypass the problem: eliminate open-ended price subsidies through raising energy tariffs to full cost levels (properly defined--see below), and introduce a targeted subsidy scheme whose recipients are the households themselves.

1/ See Appendix III for an institutional description of the gas-related subsidies in the Ukraine.

2/ See Appendix IV for a description of the Ukrainian heat sector.

3/ The Government has recently matched its involvement in settling external arrears by "clawing back" transfers it had made to local governments that were earmarked for subsidizing natural gas usage by households. However, this action cannot extend to heat subsidies since those are financed by local governments' own resources.

The second characteristic is associated with subsidies aimed at budgetary organizations 1/.

Despite large transfers, these organizations remain major accumulators of gas and utility arrears. While total transfers have been significantly squeezed in real terms (causing serious financial difficulties for many organizations), arrears are often the result of transfers being misused for purposes other than to cover operating costs. The budget does not have the ability to monitor usage by budgetary organizations. Rationalizing subsidies to these organizations requires a public expenditure review program; moreover, they should have the ability to generate income through, for example, the introduction of user fees. Until then, energy suppliers need to be shielded from pressures when cutting off supplies.

3. *Definition of "cost recovery" levels*

There are a number of distortions in the way energy "costs" are estimated by the Ukrainian Ministry of Economy. First, the cost formula provides only for limited investment outlays. The EBRD estimates that the electricity tariff--set under a 100 percent cost recovery basis--is one third of its long-run marginal cost level. Second, the Ministry tends to delay the adjustment of utility tariffs in response to inflation and rising fuel prices. Third, the Ministry excludes from the cost calculation formula basic operations and maintenance costs which has tended to keep energy prices artificially low despite the recent large fuel price increases. The above practices cause energy companies to incur losses that translate into inter-energy sector arrears. Finally, heat provided by non-municipal companies to households is cross subsidized by enterprises. The cross subsidy is burdensome to enterprises and has contributed to their inability to pay utility bills 2/.

1/ Budgetary organizations (e.g. schools, hospitals, universities, etc.) are completely financed by one of Ukraine's three categories of budget: state, city, and rayon.

2/ As of September 1995, households paid less than 20 percent of the cost of heat while enterprises paid 415 percent of the cost.

4. *Policy recommendations*

Two conditions are necessary for a lasting solution to the domestic arrears problem: the economic cost of energy consumption needs to be made transparent, and users need to feel compelled to incur this cost. The first condition can be satisfied by liberalizing energy prices, by eliminating open-ended subsidies, and by moving utility tariffs to their long-term marginal cost levels. The second can be satisfied by the imposition of financial discipline. It is true, however, that some users are verifiably unable to afford paying for their energy consumption. These would need to be dealt with through a system of social protection and by speeding-up the program of enterprise restructuring and privatization.

IV. *Conclusions and Long-term Issues*

This paper discusses issues related to the gas arrears problem in Ukraine. A conclusion that emerges from the analysis is that the 'crisis' can be traced to policy distortions and that the problem can be contained through an acceleration of structural reforms. A number of short-term measures should be taken. These are summarized in Table 3. Most importantly, the authorities need to remove themselves from the gas business and to ask the gas companies (both importing companies and domestic distributors) to inject more transparency and precision into gas import contractual relations, and to move energy tariffs to cost recovery levels. The latter measure needs to be complemented by the replacement of the open ended energy price-subsidy system with a targeted social safety net whose recipients are the households themselves. Equally important is the credible removal of the government's *de facto* guarantee for gas import payments which will have to go hand-in-hand with a commitment to depoliticize the process of imposing financial discipline on non-payers.

It should be recognized, though, that gas arrears are unlikely to disappear overnight. There are a number of longer-term actions which require careful preparation. These include i) restructuring the gas sector

into separate trading, transmission, and distribution entities; ii) corporatizing and eventually privatizing energy companies; iii) moving aggressively on enterprise restructuring programs; iv) strengthening the billing and collection departments of the utility companies; v) moving utility tariffs to their long-term marginal cost levels; and vi) introducing user-fees for services offered by budgetary organizations.

Table 3. Ukraine~Energy Arrears
Summary of Recommended Measures

I. External Arrears

- Make the terms of the gas import contract transparent
 - Specify the documentation and procedures to value imported gas
 - Have separate contracts for delivery, transportation, and storage
 - Have joint negotiations for delivery, transportation, and storage
 - All fees and prices should not reflect any implicit subsidy
 - Introduce a credible policy of not guaranteeing gas import payments
 - Above measures need to be announced as part of a comprehensive package
-

II. Domestic Arrears

- Eliminate open-ended price subsidies by raising tariffs to cost levels
 - Introduce a targeted subsidy scheme whose recipients are the households themselves
 - Eliminate the moral hazard problem associated with Governmental role
 - Strengthen the collection efforts including energy theft and under-reporting
 - Impose financial discipline and depoliticize the process
 - Introduce laws shielding energy suppliers
 - After a public expenditure review program, rationalize subsidies to budgetary organizations
 - Introduce user fees for budgetary organizations services
 - Immediate pass through of inflation and fuel price to utility tariffs
 - Include into the cost-recovery formula all basic operations and maintenance costs. Gradually include investment outlays
 - Eliminate cross subsidization of households by enterprises
-

Structure of the Ukrainian Gas Sector

This appendix describes the structure of the Ukrainian gas sector.

1. General

Ukraine's reliance on gas as a source of energy is among the highest in the world: measured in tons of oil equivalent, gas accounted for 53 percent of total energy usage in 1994. Of the total amount (93 billion cubic meters), domestically produced gas accounted for less than 20 percent with the difference imported from Russia and Turkmenistan. Domestic production is centered in the Shebelyenka and Poltava regions and is generated from 2000 wells. Annual production peaked at 69 billion cubic meters in 1975 but dropped steadily to around 20 billion cubic meters in the early 1990s; this was primarily caused by depleted fields and the absence of investment in new fields. Between 1991 and 1994, Ukrainian gas consumption declined by 22 percent which is significantly less than the 47 percent contraction in GDP witnessed during the same period. In 1994, 40 percent of Ukrainian gas consumption was used by (non-power) industrial users, 22 percent by power companies, 21 percent by households (mostly for cooking gas and residential water heating), 8 percent by heat companies, and 10 percent by other users (including technical losses). An undetermined amount of gas consumed by industrial consumers is used for the generation of power and heat that is supplied to districts where enterprises are located.

2. *External gas operations*

Ukrasprom (UGP) dominates international gas operations in Ukraine. The company (which is completely state owned) imports gas from Russia, ^{1/} and stores and transmits Russian gas to Western European markets. UGP owns and operates 34,500 kilometers of gas transmission pipelines whose maximum operating pressure reaches 80 Atmospheres. The company also owns 12 underground storage facilities with an active volume of 35.5 billion cubic meters. An external consultant (co-commissioned by the EBRD) estimates that the value of UGP's assets ranges, depending on the valuation method used, between US\$20 billion and US\$29 billion rendering the company's value higher than the combined worth of British Gas, Gas de France, OMV (Austria), and SNAM (Italy).

3. *Domestic gas operations*

Gas intended for the domestic market is transmitted by UGP's high pressure pipelines to "gas distribution stations". At the stations, the gas's ownership is transferred to one of nine regional transmission subsidiaries (the so called "Transgas" companies) all of which are completely owned by UGP. From the "stations", gas is transferred through 60,000 kilometers of low pressure pipelines whose operating pressure ranges from 12 Atmospheres at the "station" to 0.005 Atmospheres at the end user. The network is owned by 50 local gas distribution companies that are organized under a trade organization known as Ukrgas. Ukrgas's role is one of coordination, lobbying, and information gathering.

Until April 1, 1995, each local distribution company entered into a contract with a regional Transgas company. According to the contract, the local distribution company physically delivered the gas to end users, collected payments, and transferred the money (after subtracting a transportation and collection fee equal to

^{1/} Gas is also imported from Turkmenistan by a company called Ukrresourcy which is the reincarnation of the former Ministry of Supply.

US\$2.88 per thousand cubic meter) to the Transgas company. In its billing and collection activities, local distribution companies were assisted by more than 400 local offices located all over Ukraine.

An April 1, 1995 presidential decree maintained the physical structure of the domestic gas distribution system but changed the billing and payment procedures. As of that date, the Transgas companies (as opposed to the local distribution companies) were given the responsibility for collecting gas payments. The local distribution companies' role became limited to gas transportation. The motivation for changing the system was to simplify it. In other words, the payment chain [End user--> Ukrgas--> Transgas--> UGP--> Russia] was seen as too long and inefficient. The new system eliminated one channel: i.e. Ukrgas's local distribution companies.

4. *Non-household gas users*

Under the new system, the Transgas companies had to negotiate and sign contracts with 110,000 non-household users all of whom are metered. Each contract includes an indicative volume broken down by quarter. Every five days, the user is to pay for 5 days worth of gas as envisaged by the contract's indicative amount. Three to seven days after the end of each month, a reconciliation is made between what was actually paid and the amount of gas actually delivered. A shortfall is to be immediately paid for. A penalty of 0.75 percent per day (not compounded) starts accumulating from the day the reconciliation is made. The users are charged US\$80.8 per thousand cubic meter (up from US\$65 in mid-March.) The price, which is set by the Ministry of Economy is the sum of the border price (US\$50), high pressure pipeline fee (US\$7), low pressure pipeline fee (US\$2.4), meters' maintenance (US\$1), VAT and other taxes (US\$3.88) and UGP's "profit" (US\$16.52).

5. *Small and Household gas users*

Following the April 1 decree, few local governments required that the Transgas companies actually sign a contract with each and every apartment. Most other oblasts, however, allowed the Transgas companies to "subcontract" the household billing and collection effort back to the local gas distribution company (i.e. Ukgas's companies). In fact, in addition to households, the Transgas companies have started asking the local distribution companies, in return for a commission, to bill and collect payments also from small industrial users, budgetary organizations, all residential units, and small heating boilers. In Kiev, this amounts to 40 percent of gas usage.

Procedures used by the local distribution companies for billing and collecting are not codified either within their own internal rules nor in any nation wide energy law. In general, the procedure for collecting from small non-residential gas users is similar to that employed by the Transgas companies. For residential units, the distribution company sells gas through the "living exploitation offices--Gyecks" who, in turn, collect the payments from households and transfer it to the gas distribution company. Gas usage by households is mostly unmetered; payment is based on number of people in a household, and on the number and kind of appliances used. There has been a recent effort to install meters with incentives provided to households who would pay less per cubic meter if they were to install the meter. An external consultant estimates (preliminarily) that households will consume 25 percent less gas as a result of the installation of meters. Gas consumption by the households is subsidized; they pay a fraction of the cost to the Gyeck; the Gyeck transfers the amount to the local distribution company; and the state budget (using the local budget as intermediaries) pays the difference directly to the gas distribution company.

Ukraine--Government Guarantees for Gas Import Payments

This appendix examines the issue of whether the Ukrainian Government is liable for external payment arrears on gas imports. Since the situation is different regarding imports from Russia and Turkmenistan, each case is discussed separately.

1. *Russia*

The contract between Ukrgasprom (UGP) and Russia-Gasprom (RGP) provides for an official guarantee for gas import payments. However, the UGP/RGP contract is not counter-signed by a representative of the Government of Ukraine (GOU). Moreover, there is no parallel agreement--signed by a representative of the GOU--that makes the GOU liable for UGP's arrears.

A Ukrainian legal framework exists that defines how official external payment guarantees are provided. A decree was issued by the Cabinet of Ministers on March 17, 1993, is numbered 25/1993, and entitled "On Rendering State Guarantees for Foreign Credits Provided to Ukraine According to International Agreements." ^{1/} The decree specifies that guarantees have to be issued by the Cabinet of Ministers. In other words, the Cabinet of Ministers is the sole entity with the powers to provide external payment guarantees.

In Ukrainian law, no other instrument--except a formal Cabinet of Ministers guarantee--can constitute as formal government guarantee. In particular, neither i) oral promises by high level government officials;

^{1/} The decree superseded a memorandum of the Management Board of the Supreme Soviet dated December 16, 1991, numbered 1996/XII and titled "Rendering to the National Bank of the Ukraine the role of the Guarantor for credit obtained from International Banks and International Financial Institution." The memorandum named the National Bank of Ukraine as the sole official guarantor of international credit.

nor ii) precedents whereby the Government repeatedly intervenes every time a particular importer accumulates arrears to a foreign supplier, constitute a formal guarantee. 1/

2. Turkmenistan

The situation with Turkmenistan is slightly different, There is a contract for gas delivery signed by an autonomous Ukrainian company (Ukrresourcy--UR) 2/ and the Turkmen Ministry of Fuel and Energy (TMFE). The contract describes volumes, prices, and payment mechanisms but includes no references to any government guarantee. However, in parallel to the UR/TMFE contract, there is another agreement, signed by the presidents of Ukraine and Turkmenistan, that states that the "Ukrainian party [defined elsewhere as the Government of Ukraine] will ensure payments for the delivery of Turkmen gas."

The Ukrainian authorities insist that the parallel contract (i.e. the one signed by the president) does not qualify as a formal guarantee. The word "ensure"--even if signed by the president--does not constitute a State guarantee. There is relevant precedent: an importer of Turkmen gas in 1994, who had fallen into financial trouble, had to obtain a Cabinet of Ministers' guarantee before it was able to ask the government for a bail out.

1/ In Western "common law" countries, guarantees have also to be in writing. Oral or precedent can constitute evidence that a party has guaranteed another's debt; however, such 'evidentiary' material can not lead to the definite conclusion that a guarantee has been provided.

2/ Ukrresourcy is a "joint stock" company that owned by the Government.

Ukraine--Gas Related Government Subsidies

The Ukrainian Government (at all levels) offers three kinds of gas-related explicit subsidies. The subsidies' beneficiaries are households and budgetary organizations 1/.

1. *Natural gas subsidies*

Natural gas is used by the household for cooking and water-heating purposes. The physical transmission of gas is made by local gas distribution companies; delivery is made to an apartment through low pressure pipeline networks (see Appendix 1). The distribution company sells the gas to the Gyeck who collects payments from the households and transfers it to the distribution company. As of April 1, 1995, the local distribution company transfers the payment to one of Ukrgasprom's Transgas companies. Since households pay only a fraction of the gas's price, the difference is paid to the Transgas company by the local governments; however, the subsidy is explicitly financed by the state budget through transfers to the local government.

2. *Heat subsidies*

Heat companies sell heat to "living exploitation offices--Gyecks" at full cost (see Appendix 4). Gyecks sell the heat to households at a subsidized rate. A transfer is made by the local governments to the Gyecks with the aim of covering the subsidy's cost.

1/ Budgetary organizations are entities providing social services to the population (e.g. schools, hospitals, universities, etc.) Those typically charge no user-fee and are, therefore, completely dependent on one of the budget's three levels (state, city or rayon) for all of their financing.

3. *Subsidies to budgetary organizations*

Budgetary organizations are charged full cost for utilities. However, they receive direct transfers from one of the budget's three levels (state, city, and rayon) that are to be used for covering the organizations' operating costs including utilities.

Structure of the Ukrainian Heating Sector

This appendix describes the general structure, tariff, and payment and billing systems of the Ukrainian heating sector.

1. *General*

Heat and hot water are predominantly supplied through district heating networks although many enterprises own their own boilers and supply heat to the region where they are located. Heat originates from cogeneration power plants that are typically fueled by gas (47 percent), coal (41 percent), or by mazut (8 percent) ^{1/} There are two systems through which end-users access heat and hot water; both originate from a network of "principal pipelines." In the first system, independent distribution pipelines branch out from the "principal pipeline" and typically service one unit (a building) which can be controlled without jeopardizing the rest of the network. In the second system, a "mini-network" (often circular) branches out from the "principal pipeline" and services a large number of units. One could only control the mini-network at the aggregate level. Cities usually have the second system, while towns and villages have the first system. Heating plants can control and monitor the amount of heat leaving their plants. They can do the same with heat supplied to non-household users. However, heating plants, in general, lack the ability to control and monitor household heat usage beyond the "principal pipeline" level. In the latter cases, the EBRD staff estimates that it is not financially prohibitive to install heat exchanges that can separate a housing unit from the central supply. Regarding the level of the unit at which the exchange should be put, EBRD staff feel that a small block of buildings (or a large residential building) is usually a good rule of thumb: non-payers can effectively be monitored by their own neighbors.

^{1/} A heavy fuel residual.

2. *Tariffs*

Heating tariffs are determined by the government on the basis of cost proposals made by the heating companies. In April 1995, the cost of producing 1 Gilo-Calorie (GC) of heat was Krb. 3.5 million. Households pay a tariff of Krb. 0.68 million per GC. If heat is provided by district heating companies, the subsidy is covered by the local governments. If, on the other hand, heating is provided by enterprises or power companies, the subsidy burden is incurred by non-household users unless the subsidy exceeds 15 percent of household income in which case the budget is responsible for the difference. This cross subsidization system has meant that the heat tariff for non-household users amounts to several times the production cost (i.e. Krb. 11.057 million per GC.)

3. *Payment and billing mechanisms*

Heating companies enter into contracts with "living exploitation offices" known by their Russian acronym as "Gyeck". Gyecks are essentially real-estate management companies that oversee the affairs of a number of apartment buildings in a certain district. The contract with each Gyeck stipulates that the heating company will supply to each apartment heat that ensures that temperature (during winter) will not go below 18 degrees, and hot water whose temperature will not deviate from 50-60 degrees. The heating company estimates GK energy needed per Gyeck; the estimates are based on the number of square meters managed by each Gyeck and by the width of the pipeline to which the apartments are connected. The annual cost of the heat, in its totality, is billed to the Gyeck that is required to pay 1/12th of it each month.

The Gyeck, in turn, bills each apartment on the basis of the apartment's area. Gyecks collect from households who pay directly into a special Savings Bank account. As indicated above, households pay only a fraction of the heating cost. Local governments provide the difference to the Gyecks who consolidate both amounts and transfer it, with a month delay, to the heating company.

Energy Arrears--Lessons from the Estonian Experience

The Estonian stock of energy related arrears is quite small both relative to GDP and in comparison to that in states of the former Soviet Union. Since 1992--when the breakup of the Soviet Union and the Estonian monetary reform resulted in the accumulation of inter-enterprise arrears--the stock has been declining fairly rapidly in nominal terms.

A quantitative picture of the energy sector's indebtedness (at end-1993 and end-1994) is provided in the attached Table 4. A number of remarks can be made. First, external indebtedness is quite small, and almost entirely accounted for by the gas sector; however, the amount is not overdue and represents the one-month trade credit allowed under Estonia Gas' contract with Russia's Gasprom. Second, small as they are, existing arrears in the Estonian economy have arisen in the way that is typical of the region's. I.e. one subsector accumulates large payables to other subsectors which, in turn, stop paying their own bills to still other subsectors. In Estonia, this cycle emerges from the heating subsector which has been generating losses for two reasons: it has not been allowed to price heating tariffs at levels that "truly" recover costs; and it faces technical difficulties when wishing to impose financial discipline on end users. The largest heating company owes money to its owner (the electricity company), which in turn, has found it difficult to pay its own suppliers. Third, since mid-1993 (i.e. after energy price liberalization), the budget has succeeded in not assuming the liabilities of any energy subsector. Companies in indebted subsectors have been forced to deal directly with each other. This approach appears to have succeeded since the stock of debt has indeed been falling in nominal terms as enterprises find it beneficial to pay each other or reach alternative agreements.

The remainder of this appendix attempts to explain the lessons that can be derived from the Estonian experience. When applicable, examples are provided to illustrate the particular lesson.

1. *Liberalize energy prices*

This ensures that the budget is not burdened with open-ended subsidies, and that upstream energy companies are guaranteed a minimal level of profitability allowing them to pay for their own supplies. Two examples can illustrate the dangers of controlled prices: first, in 1992, the national oil company was forced to sell mazut at below-import prices. The consequence was large losses that translated into tax arrears that had to be eventually assumed by the budget. A second example is the heating tariff that remains at below-cost. While not directly subsidized by the budget (hence no direct budgetary impact), this, as described above, has generated an arrears cycle.

2. *Encourage inter-sectoral competition*

The oil sector is a good example: open competition between more than 15 companies has ensured that prices are at international levels and that the quality of oil products (as well as its delivery) has improved significantly. Competition is not always feasible. In cases of natural monopolies (electricity and heating), there is a need to set up a regulatory agency that can determine prices and watch over monopolistic behavior. This has not always worked very well in Estonia. The below cost setting of heating tariffs is one example. Another example can also be cited to show that the politicization of the price setting process can create serious difficulties. In 1992, Estonia faced a major shortage of oil products. In early 1993, and to stave off another shortage, the government forced the oil company into importing mazut--at the time costing Kroon 135 per ton--and required that the mazut be sold at no lower than the import price. In the meantime, mazut import prices fell and other companies were able to sell the product at Kroon 120 per ton. The Estonian Oil company was only able to sell its own stock a year later thus incurring large losses associated with the need to keep stored mazut heated at all times.

3. *Eliminate any government role in importing energy*

Soon after regaining independence, Estonia rapidly moved to a system of inter-enterprise dealings in foreign trade including energy. After 1993 (see point 2. above) oil imports are completely liberalized with oil companies competing to import oil at the cheapest price from Russia and Finland. The government does not provide payment guarantees although importing companies are required (by their suppliers) to have Western banks' guarantees. Regarding gas, any company has the legal right to import from Russia; however, in practice, only the Estonia Gas company does so. The latter company, however, is completely corporatized and the government only has minority shareholding (30 percent). The government does not provide Russian Gasprom with payment guarantees. Russia, in response, has made it clear that it will cut off supply if Estonia Gas runs into arrears. To ensure that this doesn't happen, Estonia Gas is very strict about collecting from domestic distributors. Relations with Gasprom have been quite smooth as the latter company now owns 15 percent of Estonia Gas's shares.

4. *Energy companies must devise a systematic and transparent billing and collecting methods*

All energy supplying companies in Estonia have devised such systems ^{1/}. To implement them, most have significantly strengthened their billing and collection departments. Although it varies from one company to another, the system generally works as follows. i) Companies make sure that they can monitor and control the energy usage of all large customers and that of small ones who have weak payment record. This has sometimes required fresh investments in meters and valves; ii) companies send regular bills to their customers. Some companies have elected to shorten the payment period relative to that applicable during the Soviet times; iii) all bills clearly state the date when a payment is due and the payment mechanism that is

^{1/} This confirms a World Bank consultant's report which (in the Moldovan context) stressed that weak billing and payment systems contribute significantly to the arrears problem in the states of the FSU.

accepted by the company; iv) if, by the due date, no payment is received, the companies would, after a reasonably short period of time (usually a week to ten days), send a reminder; iv) if no result is obtained, the companies would send a second reminder with a notice attached; v) at this stage, the companies determine (usually following meetings with the customer) whether the non-payer is illiquid or insolvent; vi) if insolvent (i.e. if the energy company decides that there is no possibility for future repayment), the company immediately cuts-off supplies and takes the non-paying user to bankruptcy court. On this point, one should stress that positive impact that the bankruptcy law, introduced in September 1992, has had on the arrears problem in that companies were able to pursue through the courts enterprises that fell into arrears; and, vii) if the non-payer is going through difficult financial times, the companies would try to arrange for gradual repayment schedules or, for alternative methods of payment. Typically, in the latter case the company requires pre-payment or escrow accounts before it makes future deliveries.

5. *Depoliticize the process imposing financial discipline*

For the above system to be fully functioning, energy companies must have complete freedom in cutting off supplies to non-payers. While all energy companies insisted that they prefer to resorting to the option of cutting off supplies only as a last resort, they all stressed that they had repeatedly used the method. A striking example include cutting off hot water to a whole district in Tallinn. Another involves the gas distribution company cutting off gas to several heating companies during the last two heating seasons. This has forced the heating companies to produce heat using the (cheaper but less efficient) mazut while rationing heat to its customers.

This imposition of financial discipline has been greatly facilitated by the absence of political pressure from the local and state governments. The oil company recalled the last time such pressure was exerted in 1992 when the government forced it to sell oil to farmers although it was clear that the probability of

repayment was minimal. Since then, the government, which had to absorb the cost through the oil company's tax liabilities, has refrained from exerting any such pressures. The isolation of the companies from governmental pressure has been helped by the energy companies' corporatization and privatization. Another contributing factor has been the absence of a requirement that a company seeks governmental approval when wanting to cut off energy supplies to a non-payer. More importantly, however, the government appears to have taken a political decision not to interfere in the process of cutting off supplies.

Table 4. Estonia: Energy Sector Indebtedness, 1993-1994
(In millions of EEK)

	Electric company	Heat company	Gas company	Oil shale company	St. owned companies	Agric.	Budget	Fines	Railways	Banks	External	Other	Total
1993													
Electric company													
Receivables	171			53	29						3	21	277
Payables			3	84	2			44	2	30	0	100	266
Net	171		-3	-84	50	29		-44	-2	-30	3	-78	11
Heat company													
Receivables													0
Payables	171		8										179
Net	-171		-8										-179
Gas company													
Receivables	3	8		25	7							30	73
Payables								5		52	29		86
Net	3	8		25	7			-5		-52	-29	30	-13
Fuel company													
Receivables				33	37				1				71
Payables							182	28					210
Net				33	37		-182	-28	1				-139
Oil shale company													
Receivables	84			25							5	2	116
Payables							110	141			2	2	254
Net	84			25			-110	-141			3	0	-138
Total Energy Sector													
Receivables	87	179	0	0	136	74	0	0	1	0	8	54	538
Payables	171	0	11	84	2	0	292	218	2	82	31	101	995
Net	-84	179	-11	-84	133	74	-292	-218	-1	-82	-23	-48	-457
1994													
Electric company													
Receivables	118			33	30						1	22	203
Payables			33	49			26	44	7	22		22	201
Net	118		-33	-49	33	30	-26	-44	-7	-22	1	0	2
Heat company													
Receivables													0
Payables	118		13										131
Net	-118		-13										-131
Gas company													
Receivables	33	13		29	2							40	116
Payables								5		72	40		117
Net	33	13		29	2			-5		-72	-40	40	-1
Fuel company													
Receivables				49	12				1				61
Payables							1	15					16
Net				49	12		-1	-15	1				45
Oil shale company													
Receivables	68			20									88
Payables							74	141					215
Net	68			20			-74	-141					-127
Total Energy Sector													
Receivables	102	131	0	0	130	44	0	0	1	0	1	62	469
Payables	118	0	46	49	0	0	101	205	7	94	40	22	680
Net	-17	131	-46	-49	130	44	-101	-205	-6	-94	-39	40	-211

Source: Estonian authorities

