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**UKRAINE ENVIRONMENTAL MANAGEMENT PROGRAM
STAGE 3 REPORT**

**OPTIONS FOR DEVELOPING
THE USE OF ECONOMIC INSTRUMENTS
TO IMPLEMENT ENVIRONMENTAL POLICY
IN UKRAINE**

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INTRODUCTION

The USAID Ukraine Environmental Management Program (EMP) is supporting the activities of the Program to Promote Sustainable Development in Ukraine. Under the first two stages of the EMP, reports have been prepared on international experiences in the use of economic instruments in environmental policy (Stage 1) and Ukraine's use of economic instruments (Stage 2). This report summarizes the research conducted under Stage 3 of the EMP on options and recommendations for modifying the current system of economic instruments for environmental management in Ukraine and introducing new instruments.

In preparing the final set of options and recommendations, the project team received feedback from participants at the seminar "Options for Developing the Use of Economic Instruments in Ukraine," convened in Kyiv, July 21, 1997 and in follow-up discussions. The team also received written suggestions from members of the Work Groups of the Program to Promote Sustainable Development in Ukraine. As a result of these discussions and written suggestions, the Stage 3 Report concentrates on three areas of reform: modifications to the existing systems of pollution charges, non-compliance penalties, and environmental funds. Other economic instruments are discussed in the Stage 1 and 2 Reports but are not featured in the Stage 3 Report. With the exception of a product charge on fuels, the team is not recommending the introduction of new economic instruments at the present time. Thus, although innovative mechanisms such as emission trading may result in improved incentives for polluters and lead to reduced compliance costs, Ukraine does not presently have mature markets for such trading and environmental management capabilities that can promptly respond to either regulatory or market signals. The only major economic instrument currently in use in Ukraine that is not discussed in the Stage 3 Report is the system of natural resource fees. The reason for not including this discussion is the fact that officials of the Ukrainian Ministry of Economy, which administers natural resource fees, are aware of the principal shortcomings of the system and already have plans to gradually increase natural resource fee rates, particularly for mineral extraction.

Pollution charges and non-compliance penalties in Ukraine have the potential to promote the *Polluter Pays Principle* and raise significant revenues. The charge on allowable levels of pollution represents a payment for the right to discharge pollutants into air and water or dispose of solid and hazardous waste on land. If the rate is high enough, it may create incentives for facilities to voluntarily reduce pollution below allowable levels. Non-compliance penalties have a similar function as charges on allowable pollution but their purpose is to encourage facilities to reduce pollution to acceptable levels. Typically, rates charged on allowable pollution are much lower than for non-compliance. Ideally, the non-compliance penalty should be high enough to make it more costly not to comply than to comply.

The options discussed in Chapters 1 and 2 are designed to strengthen the systems of charges and non-compliance penalties and increase the revenue generated from these sources. Some attention is also given in these chapters to improvements in administrative procedures for collecting these revenues and for strengthening compliance and enforcement capabilities. In Chapter 1, the discussion of reforms to the system of charges is organized around three major topics: the charge base, charge rates, and revenue collection. In Chapter 2, improvements are proposed for the

systems of charges on exceedances and “compensation for losses” – two forms of non-compliance penalties used in Ukraine. Chapter 2 also discusses environmental liability, which may provide an economic basis for facilities to take preventive measures, even if they are not required to do so under current regulations.

Presently, the revenues from charges and non-compliance penalties are deposited into extra-budgetary environmental funds at the local, oblast, and national levels, which are supposed to provide financing for environmental activities. Chapter 3 presents recommendations for strengthening these new environmental funds. The issues discussed in Chapter 3 include organization of funds as legal entities and development of management structures; development of decision-making procedures and project selection criteria; disbursement methods; and mechanisms for ensuring accountability.

CHAPTER 1

POLLUTION CHARGES

As discussed in the Stage 2 Report, the system of pollution charges is an integral part of the environmental compliance program in Ukraine. Their primary purposes are to provide economic incentives for facilities to comply with regulations and generate revenue for environmental protection. In 1996, revenues from pollution charges were US\$ 12.2 million, accounting for 81% of total revenues to extra-budgetary environmental funds. The amount collected is small compared to amounts collected by many Central and East European (CEE) countries that are smaller and less industrialized than Ukraine. The amount collected is low for two reasons: (1) low charge rates per ton of pollution and (2) low revenue collection efficiency. The recommendations in this chapter focus on overcoming these two problems.

1.1 Charge Base

This section examines the basis for pollution charges and focuses on the following issues: the implications of ambient standards revisions on allowable emission and discharge limits; reduction of the number of pollutants for which charges are levied; and replacement or modification of pollution charges on hazardous and solid waste and mobile sources of air pollution.

1.1.1 Revision of Ambient Standards and Loading Limits

The basis for pollution charges in Ukraine is the annual loading limit referred to as the Maximum Allowable Emission (MAE). This limit is determined on a pollutant by pollutant basis for each pollutant discharged by the facility and is part of the emission permit. Facilities must demonstrate that their emissions will not result in violations of the ambient concentration or Maximum Allowable Concentration (MAC). (For example, there are MACs for 1,960 air pollutants in Ukraine.)

Many of the Ukrainian MACs for water and air are much stricter than ambient standards recommended by the World Health Organization or adopted in most OECD countries. The more stringent ambient standards are largely a result of a process of standards development employed in the former Soviet Union (FSU). This process has two key features which distinguish it from approaches used in western countries. First, the FSU approach for setting ambient standards would be characterized as *risk assessment* rather than *risk management*. The ambient standards were set based only on human exposure and avoidance of acute and chronic health risk. In determining the ambient standard, consideration was not given to the technical or economic feasibility of meeting the ambient standard (i.e., risk management factors). An open process, which would allow the public and industry to comment on technical and economic considerations, was lacking in the FSU, largely because all major

enterprises were owned and operated by the state. Second, there is a difference between levels of risk avoidance. In FSU countries, ambient standards were set to avoid risks to the greatest number of individuals. In the U.S., there is a tacit acknowledgment that some level of residual risk is inevitable. Thus, ambient standards in the U.S. may be set to achieve acceptable health risks of 1 incident per 100,000 or 1 million people instead of completely eliminating health risks. In other words, western law does not require the elimination of risk, but only the management of risk within acceptable limits.

To meet the MACs, emission and discharge limits must be set at levels that are technically unachievable or unaffordable. The adoption of unrealistic ambient standards diminishes the incentive value of non-compliance penalties and compromises enforcement efforts. In addition, the setting of MAEs to meet the strict MACs implies that considerably less pollution is considered allowable and more pollution is subject to exceedance charges.

The Ukrainian Ministry of Environmental Protection and Nuclear Safety (MEPNS) is currently reviewing ambient standards for air and water as part of the World Bank-funded project to strengthen environmental management capabilities. An effort should be made at a political level to persuade decision-makers that continuing to support unachievable and unrealistic MACs is counter-productive and will undermine Ukraine's efforts not only to align itself with the world consensus on environmental standards but to strengthen its market economy as well.

The likely outcome of this ambient standard review exercise will be less stringent MACs for the primary air and water pollutants. The change will, among others, increase the volume of emissions and discharges that are subject to charges for pollution within allowable limits and decrease the amount that would be potentially subject to charges on exceedances. Assuming the charge on exceedances would be greater than the charge on allowable emissions, the potential amount that could be collected from both charges would decrease absent a change in charge rates.

1.1.2 Number of Pollutants Subject to Charges

The number of air and water pollutants subject to charges in Ukraine is not excessive in comparison to other countries in Central and Eastern Europe (see Table 1). Nevertheless, the high number of pollutants creates a major administrative burden and increases the time and expense to verify self-reported emissions and discharges. In addition, in the event that Ukraine considers increasing charge rates (see Section 1.2), the need for verification will grow since polluters will be increasingly tempted to underreport their emissions in order to avoid paying even greater amounts in charges than before the rate increase.

The MEPNS has developed a regulatory initiative that would reduce the number of pollutants for which basic rates are established at the national level to 25 air pollutants and 10 water pollutants starting January 1998. (Oblast authorities have a right to expand the list of parameters charged if it is justified by high emissions of a particular pollutant in the oblast.) In addition to reducing the number of parameters subject to charge, the draft regulation

consolidates similar pollutants into single categories (e.g., different types of dust are combined into a particulate matter category, and all types of nitrogen oxides would be charged under one NO_x category). Also, the pollution charge parameters are being brought in line with international practice. For example, the charge for elemental sulfur has been replaced in the proposed draft regulation with a charge for sulfur dioxide.

Table 1
Pollution Charge Systems in CEE Countries

Country	Number of Pollutants Charged		Charges vary w/in country?	Penalty Multiplier	Inflation Index?	Revenue Allocation
	Air	Water				
Ukraine	92 (25) ¹	27 (10) ¹	Yes	1.1-5.0	Yes	10% NF, 20% SF, 70% LF
Bulgaria	16	27	No	n.a.	No	70% NF, 30% SF
Czech Republic	90	5	No	15 (air) 5 (water)	No	100% NF
Estonia	139	8	Yes	5-500 (air) 5-1000 (water)	Yes	50% NF, 50% SF
Hungary	150	32	Yes	n.a.	No	70% NF, 30% SF
Latvia	7	10	No	4	No	30% NB, 70% SB
Lithuania	All	All	No	10	Yes	30% NB, 70% SF
Poland	62	6	No (air) Yes (water)	10 (air) 4 (water)	Yes	36% NF, 64% SF
Slovakia	123	5	No	1.5 (air) 3 (water)	No	100% NF

Source: Adopted from Table 2.1 (pp. 34-35), Vincent, J. and S. Farrow, "A Survey of Pollution Charge Systems and Key Issues in Policy Design," Chapter 2 in *Controlling Pollution in Transition Economies: Theories and Methods*, R. Bluffstone and B Larson (eds.) Edgar Elgar Press, UK, 1997 (forthcoming)

¹ According to the MEPNS's draft regulation, the number of pollutants subject to charges will be reduced starting January 1, 1998.

Key to Revenue Allocation column: NF - National Fund; SF - Sub-national Fund (in Ukraine - Oblast Fund); LF - Local Fund; NB - National budget; SB - Sub-national budget.

Recommendation: *Adopt the regulation proposed by MEPNS which reduces the number of pollutants subject to emission charges.*

From discussions with Ukrainian counterparts, there is a strong consensus that the number of pollutants subject to charges should be reduced. However, these supporters of reducing the number of pollutants charged also believe there would be strong political resistance to this change because of the effect on revenues coupled with difficulties in obtaining parliamentary support for higher charge rates to compensate for the loss of revenue.

Implementation

This recommendation should be carefully coordinated with the recommendation to review and revise the basic charge rates.

After the draft regulation is submitted to the Cabinet of Ministers, a well-orchestrated information campaign should be undertaken that shows the advantages of reducing the number of parameters subject to charges and addresses all known arguments for maintaining the status quo. If the information campaign is successful, the changes should go into effect January 1, 1998.

1.1.3 Hazardous and Solid Waste Charges

Ukraine currently imposes a pollution charge on the "placement" (storage and disposal) of industrial hazardous and solid waste. This charge is, in fact, a charge on waste generation, and is tied to the technology-based limits for waste generation that are part of a permit issued to every enterprise. The rates of pollution charges on waste are set based on the toxicity classification but are too low to fulfill the declared function of promoting waste minimization. Although the formula for calculation of the charge includes a coefficient reflecting the safety of the disposal site (including a multiplier of 10.0 for uncontrolled dumps), this coefficient may in effect legalize promiscuous dumping of hazardous and solid wastes under the assumption that environmentally safe waste management facilities may not be available. At the same time, there are no enforceable waste management regulations in the country that would prevent promiscuous dumping.

The revenues from pollution charges on waste generation are not conveyed to operators of industrial landfills for the development of waste management facilities but distributed to the environmental funds. This results in inadequate investment in waste management facilities and inappropriate disposal practices. Therefore, the existing charge on waste plays neither an incentive nor a revenue-raising role for waste management purposes. In addition, the current system of charging for waste generation without stringent regulatory control over safe management of hazardous and solid waste discourages the development of a market for waste management services in Ukraine.

Recommendation: Implement a comprehensive regulatory scheme for managing hazardous and solid waste; replace charges on hazardous and solid waste with tipping fees.

It is recommended that Ukraine establish a sound industrial hazardous and solid waste management system that relies on strict command-and-control regulatory mechanisms concerning generation, storage, transport, treatment, and disposal of wastes (see Box 1).

In combination with the introduction of this regulatory program, Ukraine should consider eliminating or phasing out pollution charges for industrial hazardous and solid waste and

allow providers of waste collection, transport, storage, treatment, and disposal services to charge enterprises directly for these services in order to recover the full costs of safe management of the wastes. Such "tipping" fees would be market-based and would reflect the cost of constructing and operating waste management facilities.

Box 1	
Recommendations for a Comprehensive Industrial Waste Regulatory Structure	
1	Registration with the regulatory body by all enterprises of the types of hazardous waste they generate and the quantity of the hazardous waste generated.
2	Registration with the regulatory body by all enterprises of the way in which they intend to manage any hazardous waste on-site or transport off-site for management or treatment, including recycling.
3	Registration with the regulatory body of hazardous waste in storage.
4	Recording of how hazardous waste is actually managed on-site and off-site, including the documentation of hazardous waste movement "from cradle to grave" to ensure that hazardous waste managed off-site in fact reaches its final destination in an environmentally sound manner.
5	Licensing of treatment, storage, and disposal operators in accordance with technology standards and hazardous waste transporters and their vehicles in accordance with performance standards.
6	A recordkeeping and reporting regimen for generators and transporters of hazardous waste, and for the owners and operators of treatment, storage, and disposal facilities.
7	Computerized recording and cross-checking of the information requirements of this regulatory structure.
8	Incentives and/or requirements for reutilizing the wastes, managing the wastes on-site and investing in "clean technology."
9	Penalties for failure to comply with the regulatory structure (different from pollution charges).
10	A system of regular enforcement through compliance monitoring and inspections

Implementation

Article 10 of the draft Law on Waste does provide for fees for collection, storage, transport, treatment, and disposal services. However, the draft law also retains the system of pollution charges for waste generation (Article 34). The pollution charges for waste generation would become redundant once there is a system for charging for industrial hazardous and solid waste management services that completely recovers the costs of operating facilities capable of managing these wastes safely. The system of tipping fees for waste management services would create incentives for the development of markets for waste materials and/or alternative waste management options. It would also serve as a greater incentive for waste minimization practices than the current system of pollution charges for waste.

It is important to emphasize that the introduction of tipping fees is contingent on the existence of a diligently enforced regulatory system for waste management. In the absence of such a system, the replacement of the pollution charges with tipping fees will do nothing to curtail the indiscriminate waste dumping practices.

As long as a stringent regulatory system is in place, a distinction between waste generation levels below allowable limits and levels exceeding allowable limits (that is still retained in the draft Law on Waste, Article 17) is unnecessary. The only rationale for establishing allowable limits for solid/hazardous waste is a presumption, in view of the lack of disposal facilities, that the wastes are disposed of in the environment in an uncontrolled manner. The limits for waste generation should be phased out following the establishment of a comprehensive regulatory system for waste management, such as that recommended in Box 1.

Implementation of the proposed recommendation requires changes to the Cabinet of Ministers' Resolutions No. 18 of January 13, 1992 and No. 373 of July 7, 1992. These changes should be proposed by MEPNS and coordinated with the Ministries of Economy, Finance, Energy, and Industrial Policy. This work is in progress, given the continuing work on the draft Law on Waste. The team emphasizes the importance of developing technology-based standards for treatment, storage, and disposal facilities, and performance standards for hazardous waste transporters because standards form the basis for the issuance of all permits.

Before the system can operate, however, it will be necessary to develop several (probably) regional treatment and disposal facilities in industrial centers. This should be done through international loans or using public-private joint ventures (e.g., oblast offering a concession to a private developer to build and operate a facility for a period of time, say 20 years, and then transferring the facility back to the oblast).

Surveys and studies should be undertaken to determine the volume of hazardous waste generated in Ukraine and the extent to which enterprises are likely to manage their wastes themselves on or near their factory sites. This, in turn, will help determine the size, i.e., the expected throughput, of the *off-site* regional treatment and disposal facilities that must be ready to manage the wastes -- at a price -- for those enterprises that do not wish to make on-site waste management investments. Thus, regional facilities, in order to be economically viable, must "size" themselves in accordance with an expected waste stream volume. All facilities, whether on-site or off-site, must be built to standard specifications for the protection of public health and the environment. Similar requirements apply to the management of non-hazardous industrial solid waste.

Thus, the existence of standards and their rigorous enforcement will create the *certainty* of a demand for services. This certainty will lead to the creation of service companies (that will charge appropriate fees) to fill the needs of this sector. This has been the experience of every industrialized market-based economy. A corollary to the effect of standards in creating an industrial hazardous and solid waste management system is, as we have pointed out, that pollution charges are ineffective by themselves in stimulating a waste management program to protect public health and the environment.

1.1.4 Pollution Charges on Mobile Sources

The use of a pollution charge on mobile sources in Ukraine is somewhat unusual. The charge per ton of fuel varies according to the type of fuel and the population in the locality where the enterprise is located. Depending on the type of transport activities conducted by the enterprise, the fuel upon which the charge is assessed may or may not be combusted in the proximity of the population which determines the coefficient and associated charge rate. The

use of such a coefficient for population appears to be inappropriate and imperfectly matched with human health damages associated with mobile source pollution. In addition, such a charge is administratively inefficient when compared to a product charge on fuel, which can readily be incorporated into the price of fuel at the point of distribution.

Recommendation: *Replace charges on air pollution from mobile sources by a product tax on fuels.*

Ukraine should consider replacing the pollution charge with a product charge on fuel. The charge rate for the fuel product charge should be differentiated according to fuel quality (higher charge on more polluting fuels) in order to discourage use of dirtier fuels and to encourage the introduction of cleaner fuels and vehicles which can burn cleaner fuels. In addition to its incentive value, a product charge on fuels would have some advantages over the current pollution charge. First, all users of fuels would be subject to the product charge. Certain enterprises are currently not required to pay the pollution charge. Second, the amount of revenue that would have to be replaced if the pollution charge on mobile sources is eliminated is quite small. Thus, a very modest product charge rate could be applied (although low charge rates would diminish the product charge's incentive value) if the only purpose was revenue neutrality. Third, the product charge would be easier to administer since it would be collected from fuel distributors and passed through to consumers as a fuel surcharge.

Implementation

In order to implement this option, changes should be made to Ukrainian tax laws (through a legislative initiative from the Ministries of Economy and Finance) and the regulations of the Tax Administration of Ukraine. An information campaign should be addressed to the Cabinet of Ministers demonstrating the advantages of a product charge on fuel over pollution charges.

The product tax on fuels, it must be recognized, only addresses the question of lost revenues from eliminating pollution charges on vehicles. There is no link to environmental protection, so an independent program should be established to protect the public from the sizeable impacts of vehicle emissions. Ordinarily, such programs have three components: (1) changing gasoline from leaded to unleaded constituents; (2) requirement of the installation of catalytic converters in all new vehicles to scrub exhaust gases; and (3) an inspection and maintenance program to ensure program quality. The components of the program must be promulgated at the national level.

1.2 Charge Rates

This section examines the way pollution charges are calculated and includes recommendations on increasing rates, simplifying rate calculation, and adjusting charge rates for inflation. Ideally, pollution charges should equate marginal environmental benefits and marginal abatement costs. This means that polluters would have the incentive to reduce pollution up to the point where the charge rate is just equal to the cost of reducing the last ton

of pollution. (It is assumed that the cost of reducing each additional ton of pollution increases.) According to economic theory, when the cost of reducing a ton of pollution is lower than the charge for emitting a ton of pollution into the environment, the polluter would prefer to reduce pollution than pay the charge.

In practice, pollution charges are not set at levels high enough to provide incentives for pollution reduction. Instead, most countries which employ pollution charge systems with much lower rates, combining them with regulations and/or facility permits. The determination of charge rates in most countries is based on factors other than incentives for pollution reduction. Some countries (Estonia, Hungary, Kazakhstan, Russia, and Ukraine) consider the potential for environmental damages in setting rates. Thus, in these countries, there are local differences in charge rates to reflect the potential for more or less damage. Many countries vary charge rates according to differences in the toxicity of pollutants. These differences are directionally correct even if the relative magnitudes are not directly linked to potential health or environmental risks. The two major factors that are considered in setting charge rates are the financial impacts of pollution charges on enterprises and meeting minimum revenue requirements. Most discussions of the financial impacts of pollution charges on enterprises are based on anecdotal evidence. One exception is a survey of the 112 largest polluters in Poland conducted in 1992 (Broniewicz et al.). By 1992, Poland had increased pollution charge rates 18-20 times their level in 1989. However, for these largest enterprises, pollution charge payments accounted for only 4.9% of production expenses.

1.2.1 Basic Charge Rates

The basic pollution charge rates in Ukraine are quite low in comparison to rates used in CEE countries (see Table 2). Low charge rates limit revenue potential and do not provide incentives for reducing pollution. On the other hand, given the low collection efficiency at present, increasing charge rates to generate more revenue and encourage pollution reductions may only further reduce collection efficiency (in the absence of new measures to improve collection rates).

Recommendation: Review and revise the basic charge rates

It is recommended that Ukraine conduct a review of current charge rates and propose new rates. This review might be modeled after the review process which the Government of Lithuania has recently completed. As can be seen in Table 2, Lithuania plans to significantly increase charge rates.

Implementation

Similar to OECD and other CEE countries, Ukraine is unlikely to support charge rates high enough to eliminate the need for standards, but could introduce rates high enough to provide modest incentives for reducing pollution levels. The Ukrainian review should include the following components:

- 1) Ukraine should evaluate its charge rates in comparison to rates used in other CEE countries. MEPNS officials should correspond with counterparts in other CEE countries to determine the effects that higher charges have had on collection rates and what mitigation measures may have been undertaken to lessen the burden of higher charges on specific sectors.
- 2) Ukraine should undertake an analysis of existing charge rates to determine typical charge burdens for enterprises by sector and size and estimate the resulting burden if charge rates are increased. This information should be considered in setting new charge rates.
- 3) Ukraine should conduct a needs assessment for environmental financing to enable it to set charge rates that would generate appropriate levels of revenue. This exercise must be conducted at the same time that strategies are developed to improve collection efficiency.

Table 2
Selected Environmental Charge Rates for CEE Countries
(US\$/ton)

Country	Air Pollutants			Water Pollutants			
	SO ₂	NO _x	Dust	BOD	Total N	Total P	SS
Bulgaria ³	17	51	11	114	-	-	42
Czech Republic	29	29	111 ¹	-	-	-	-
Estonia	2	4	1	77	64	116	39
Lithuania ²	67	101	46	174	108	370	70
Poland	82	82	43	172-1722			85
Slovakia	33	26	100 ¹	-	-	-	-
Ukraine ⁴	29	29	7	7	-	15	<1

Source: *Controlling Pollution in Transition Economies: Theories and Methods*, R. Bluffstone and B Larson (eds.) Edgar Elgar Press, UK, 1997 (forthcoming); Lithuania charge rates supplied by R. Bluffstone.

Key: BOD - Biological oxygen demand; Total N - Total nitrogen; Total P - Total phosphorus; SS - Suspended solids

¹ Charge is on solids

² Charge rates proposed for the year 2000

³ Bulgaria has only system of fines

⁴ Charge rates proposed for 1998

The review and adjustment of charge rates should be done by MEPNS, in coordination with representatives of relevant departments of the Cabinet of Ministers of Ukraine, the Ministry of Economy, Ministry of Finance, and Ministry of Justice. This exercise should be done in coordination with the recommendation to re-evaluate the specific pollutants subject to charges. The two recommendations should be presented jointly to the Cabinet of Ministers. An information campaign should also be structured and jointly coordinated for presentation to the Cabinet of Ministers.

1.2.2 Geographical Coefficients

Ukraine uses two sets of coefficients to adjust charge rates for air pollutants: coefficients depending on the size of local population (higher charge rates apply in more populated areas) and the predominant economic function of the area (higher charge in recreational areas). For water pollutants, there is a coefficient which depends on the designated use and ecological characteristics of the water body receiving discharges. The use of these coefficients to differentiate rates from one geographical region to another reflects the logic that pollution which contributes to greater health and/or environmental damages should be charged at higher rates.

However, the annual loading limits assigned by local environmental authorities to each enterprise are already supposed to take into account the local environmental conditions, since they must be based on the MAC for a particular pollutant, emissions from surrounding sources, and carrying capacity of the receiving environmental medium. The adjustment coefficients lead to double accounting for local environmental factors (unfairly burdening local industries) and significantly increase complexity of pollution charge calculations.

The current practice also invites political interference (to avoid higher charges) and discourages investment in more polluted areas by placing a heavier pollution charge burden on enterprises in industrial urban communities. Both of these negative impacts of the geographical coefficients are likely to be aggravated by the increased charge rates.

The experience in Poland with differential rates may also be relevant to Ukraine. Two of the most polluted urban areas in Poland (Krakow and Katowice) charged rates that were twice the rates charged in all other areas of Poland (to enhance revenue collections for the regional environmental funds), only to have this practice overturned in the Polish courts. While legal systems in the two countries may differ, the important lesson to draw from the Polish experience is that industry will often expect equal treatment to ensure a "level playing field" in domestic markets.

Recommendation: Eliminate geographical coefficients for differentiating charge rates.

It is recommended that Ukraine eliminate geographical coefficients for differentiating charge rates. This recommendation will significantly simplify the formula for calculating pollution charges (Sections 2.2 and 2.4 of the Stage 2 Report). It will also eliminate the disincentive to invest in heavily polluted urban areas.

Implementation

This is another component in the package of charge rate changes that MEPNS should propose to the Cabinet of Ministers, in coordination with the Ministry of Economy, Ministry of Finance, and Ministry of Justice. A concern has been voiced by Ukrainian counterparts that substantial revenue would be lost if these coefficients are eliminated. To avoid this reduction,

the simplest solution would be to adjust charge rates to equal the effective rate currently charged under the highest adjustment coefficient.

At the same time, it is important to ensure that the annual loading limits reflect local environmental conditions and that they are strictly enforced through an appropriate monitoring and inspection regime.

1.2.3 Inflation Adjustments

Ukraine, which has experienced high rates of inflation in recent years, adjusts the nominal charge rates at the end of the year (or less frequently in the past). This practice, which is common in other CEE countries, leads to a gradual erosion in real pollution charge rates and revenue potential of pollution charges.

Recommendation: *Revise the procedure for adjusting charge rates for inflation.*

It is recommended that Ukraine revise its procedures for adjusting nominal charge rates to account for inflation in one of two ways: (1) make adjustments more frequently than once a year; or (2) make *ex ante* adjustments prior to the coming year, based on projected inflation rates. The first approach may be more attractive because Ukraine already adjusts other taxes in this way: if the Consumer Price Index (CPI) rises by more than 2.5% in a given quarter, all taxes are recalculated for the next quarter. Such a system has two flaws: first, there is slippage in real charge rates from quarter to quarter because adjustments follow, rather than precede inflation. Second, annual inflation could be as much as 10% a year without triggering adjustments in the rate (assuming rates are no higher than 2.5% in any quarter). *Ex ante* adjustments are superior to *ex post* adjustment practices in terms of their capacity to preserve the nominal charge rate. As noted above, the rate for the next year is set ahead of time. At the end of the year, the projected and actual rates of inflation are compared. In setting the nominal rate for the next year, the nominal rate is first adjusted to account for significant differences in projected and actual rates for the last year. For example, if the rate of inflation had been projected to be 25% and it was actually 20%, the nominal rate would be adjusted downward before applying the projected rate for the next year. *Ex ante* adjustments involve less administrative burden than quarterly rate adjustments; the rates are adjusted in the beginning of the year and not changed until the end of the following year. On the other hand, the potential for faulty projections could be greater in times of high or hyperinflation. In summary, both approaches are superior to current practices. Given the government's experience with the first approach, it might be the most acceptable option.

Implementation

MEPNS should incorporate an inflation adjustment coefficient in its proposed package of charge rate changes. It should determine which option (above) it wishes to recommend in coordination with the Ministry of Economy, Ministry of Finance, and Ministry of Justice. Inflation adjustments may not require statutory change. If not, changes to appropriate regulations should be timed to coincide with the effective dates of statutory changes.

1.3 Collection of Revenues

This section identifies factors contributing to low collection rates from pollution charges in Ukraine and presents options for improving collection practices.

Table 16 in Appendix 2 of the Stage 2 Report presents 1995 collection rates for pollution charges, exceedances, natural resource taxes, and compensation for losses. The overall collection rate for pollution charges in 1995 was 31.3% (in 1996, the collection rate was even lower, 10.8%, according to MEPNS officials). Collection rates were much higher for water (82.6%) than for either air (24.3%) or waste (21.6%). The average collection rates are somewhat misleading in terms of the extent of non-payment. For example, while the average collection rate for air is 24.3%, only one oblast (Donetsk) has a collection rate below the average for Ukraine and only four oblasts have collection rates for air pollution charges of less than 50%. Thus, the problem of non-payment is concentrated in areas with large industrial complexes (e.g., Mariupol in Donetsk Oblast).

Several factors contribute to these low rates:

- 1) economic situation/condition of enterprises, particularly heavy industries;
- 2) lack of strong sanctions against non-payment;
- 3) limited enforcement capabilities;
- 4) limited effort to recirculate charge revenues for environmental investment purposes;
- 5) lack of clear and consistent policy direction concerning waivers on charge payments; and
- 6) provision that allows local governments to exempt local enterprises from paying the portion of charges that go to municipal extra-budgetary environmental funds (may change as a result of restructuring of Ukrainian system of environmental funds that eliminates local funds).

Ukraine should be encouraged to make greater use of incentives and disincentives to increase collection rates. Chronic non-payment will ultimately undermine the system of pollution charges if other enterprises perceive that enforcement of payment is lax.

Recommendation: *Use deferrals or waivers on pollution charge payments in exchange for investments.*

Many CEE countries, notably Poland, provide enterprises with an opportunity to correct non-compliance situations over a period of 3 to 5 years. If the cost of corrective measures exceeds the value of deferred fines and the enterprise achieves compliance status, the fines are forgiven.

Implementation

Currently, there is a provision in the MEPNS regulations allowing waivers for the share of pollution charge payments designated for oblast and local environmental funds. Both charges for

pollution within allowable limits and exceedance charges may be deferred or waived by a decision of oblast or local authorities, respectively. The measure was prompted by widespread misallocation of environmental funds revenues. However, there is no mechanism to ensure that the waived amounts are used for environmental improvements.

In order to make a deferral/waiver program a viable incentive for compliance, certain procedural matters that allow access to deferrals and waivers must be worked out, such as the following:

The deferral must be requested, corrective measures and a time schedule proposed, and enforcement officials should monitor the enterprise's progress in correcting the violation. If the enterprise fails to fulfill the terms of the plan, the fine should be increased by 50% and payment of the deferred fine required immediately. At issue in Ukraine is whether deferrals should be available for charges on allowable pollution or only on charges applied to exceedances. If the deferral and potential for forgiveness applies to exceedances, there is a goal (attainment of the standard) that can be used as a performance measure. If there is deferral on allowable emissions, no such performance target can be set since the facility already meets the standard and only pays regular charges. Thus, deferral of charges on exceedances, especially if these are significantly greater than regular charges, can create an incentive to meet the emission or discharge limit. *Charges within allowable limits should not be subject to deferrals.*

Recommendation: *Link payment of charges to eligibility for financing from environmental funds.*

As Ukraine elaborates procedures for disbursing revenues through the environmental funds, it may be desirable to limit eligibility for financing to enterprises which have paid all pollution charges in full. This approach is used in CEE countries, notably Poland. In addition, in developing selection criteria for distributing fund revenues, funds may want to assign a higher priority to projects whose applicants have requested deferrals and developed compliance plans.

Implementation

This recommendation should be incorporated under the later recommendation to strengthen the institutional and financial aspects of the environmental funds system.

Recommendation: *Use stiffer penalties for delinquent payments.*

The current penalty for late payment is 0.1% of the amount due per day (36.5% per year), which may not be sufficiently higher than the current inflation rate to act as a serious disincentive. Ukraine may want to consider increasing the severity of the fine to reduce the incentive for non-payment.

Implementation

MEPNS, in coordination with the Ministries of Economy, Finance, and Justice, should amend its regulations implementing pollution charges to authorize stiffer penalties for delinquent payments. The following options should be considered:

One option would be to simply increase the magnitude of the daily penalty. Other options include use of a graduated penalty structure, where, for example, the size of the penalty increases each month; reassessment on delinquent payments in accordance with adjusted nominal charge rates (assuming charge rates are adjusted quarterly); or by eliminating the treatment of charges (if delinquent) as a production expense for tax purposes.

Recommendation: Use creditors' remedies and other enforcement mechanisms to collect pollution charge debts and to discourage further non-payment.

Ukraine, as an economy in transition, is learning to focus on the management of private property and the personal responsibility that attends private ownership. It means that private property, whether owned by an organization or an individual, is at risk as a consequence of non-payment of debt. In other words, organizations and individuals must pay their debts or risk losing their property.

At present, Ukrainian law appears to acknowledge the principle but limits the exposure to this risk of loss to an enterprise's bank account. Thus, if an enterprise has not paid its pollution charges as assessed within ten days of the end of the year due date, the amount payable can be transferred directly from its bank account to a government account without permission of the enterprise (see Section 2.2.5 of the Stage 2 Report). Ukraine should consider expansion of the principle to other forms of property. (According to the Ukrainian law, in cases of severe default on payments, enterprises can be closed down and their property sold to satisfy the debt. However, this measure is never used in practice against industries with delinquent pollution charge payments.)

Implementation

MEPNS, in coordination with the Ministries of Economy, Finance, Industry, and Justice, and the National Bank of Ukraine, should submit proposed changes in the Law on Environmental Protection to the Cabinet of Ministers for recommendation to the Parliament. The changes to the law should be based on the existing legal infrastructure in Ukraine, e.g., the provisions of the Administrative Code and the Civil Code. Three specific remedies should include "attachment," "garnishment," and "contract debarment."

"Attachment"

Debt collection procedures should be extended to property owned by either an enterprise or an individual for failure to pay a charge or a fine. In Anglo-American and most Western legal systems, rules that permit a creditor legal access to a debtor's property are called "creditors' remedies". Generally, however, before a creditor (in this case, the manager of the pollution charge system) can invoke these rules, procedural fairness must be observed. This includes adequate notice to the debtor that his property is at risk and an opportunity to raise a defense.

These proposed changes would complement existing sections in the Civil Procedure Code that authorize actions before the Arbitration Court to advance a right or legal interest (see Section 2.13 of the Stage 2 Report). Thus, after notice and hearing afforded to the debtor, the Arbitration Court, after hearing evidence of the existence of a lawful debt, may issue a "writ of attachment"

(or comparable Ukrainian legal instrument) authorizing appropriate local authorities to seize the property of the debtor, whether belonging to the enterprise or an individual (perhaps an enterprise manager who has been personally fined), in satisfaction of the debt. The property may take the form of automobiles, trucks, machinery, equipment, homes, apartments, dachas, art work, cash money, or any other thing of value. Ordinarily, the creditor has identified the item or items that are likely to satisfy his debt.

The debt is satisfied by empowering the local officials to sell the property, either at public auction or private sale, and giving the proceeds to the creditor in satisfaction of his debt (less the administrative costs of the sale). If the property brings more at the sale than the value of the debt, the overage is returned to the debtor.

All of these procedures need to be carefully worked out in the law. But even the threat of invoking these creditors' remedies should be a strong disincentive to previously recalcitrant debtors to avoid such procedures.

"Garnishment"

Another dimension to these same remedies relates to a different class of "property" and is ordinarily applicable only to *individuals*, such as enterprise managers fined for negligence. Individuals have a property interest in their jobs in that they are paid wages. Another scenario for the Arbitration Court, once the debt is established, is to issue a "garnishment" order to the debtor's *employer*. The order directs the employer to pay the debtor's wages directly to the creditor instead of to the debtor. Most laws of this kind exempt a portion of the wages so that the debtor has some resources for his personal needs and is also encouraged thereby to continue working.

The Administrative Code of Ukraine does not allow the use of employee's wages toward paying administrative fines. However, there is a provision in the Civil Code that can be expanded to include "garnishment" procedures.

"Contract Debarment"

Still another enforcement mechanism is called "contract debarment". This may be done administratively by the environmental ministry and does not require a court proceeding. It only applies to those enterprises that have contractual relationships with either the national, oblast, or local governments as suppliers. In this sense, governments may be customers just like anyone else. Governments may need computers, paper, office supplies, vehicles, military clothing, gasoline, and a huge spectrum of military hardware and supplies. The contracts that supply these materials and goods are valuable. If a supplier is recalcitrant and is not paying his charges, that supplier may be "listed" -- that is, placed on a list that bars governmental contracting (at all or at specified levels) with the listed firm. Again, the threat of contract debarment is a powerful disincentive to environmental mismanagement.

Following parliamentary enactment, detailed implementing regulations should be enacted by the respective agencies.

CHAPTER 2

NON-COMPLIANCE PENALTIES

In developing standards and implementing a compliance monitoring program, the government's goal is to obtain a high level of compliance with regulatory requirements. In most OECD countries, compliance rates of 85 to 90% or even higher are desirable and obtained on a regular basis. Even though a country may rely on command-and-control regulations to achieve compliance, economic instruments are relied on to encourage polluters to comply with standards. An effective enforcement program must rely on effective disincentives to discourage non-compliance. The logic of non-compliance penalties is that the penalty should be large enough so that the costs of non-compliance (payment of penalties) are greater than the costs of compliance (annualized costs of meeting the standard). Because of the difficulties of detecting and prosecuting non-compliance, enforcement officials often argue for higher penalties to ensure that the expected costs (accounting for probabilities of less than one for detection and conviction) of non-compliance also exceed the costs of compliance. In this case, the non-compliance penalty serves as a deterrent to chronic non-compliance, even if there is some probability that the enforcement authorities will be unsuccessful in punishing non-compliance.

In this chapter, three non-compliance penalties are examined: charges for exceedances, "compensation for losses," and liability provisions.

2.1 Charges for Exceedances

The formula for pollution charges includes a charge for pollution within allowable limits (established in emission and discharge norms) and a charge for pollution which exceeds allowable limits (non-compliance component). Even though these two charges appear in the same formula, they are treated differently for tax purposes (charges for allowable pollution can be deducted as production costs whereas exceedance charge payments receive no preferential tax treatment) and are collected at different intervals (charges for allowable pollution are collected quarterly, charges for exceedances are calculated and collected at the end of the year). Ukraine uses a multiplier for exceedance charges, which can vary at the discretion of oblast authorities from 1.1 to 5.0. However, practice shows oblast governments usually set the multiplier at the highest level, i.e., 5.0.

Recommendation: *Treat charges for exceedances separately from charges for pollution below limits.*

Currently, allowable charges and exceedances are contained in the same formula. It is recommended that separate formulas be used for allowable discharges and exceedances for the following reasons:

- 1) Allowable charges are paid quarterly whereas exceedances can only be assessed and paid annually;
- 2) The two charges are treated differently for tax purposes. By placing them in the same formula, there is a tendency to add them together and treat them as the charge burden, when in fact, the charge on exceedances is more costly for the facility (even if the rates are identical) because of differences in tax treatment; and
- 3) It is important to separate charges for allowable discharges from exceedances because the latter imply a violation of the standard. While this may seem to be a trivial distinction, the goal of environmental monitoring is to attain compliance and charges for exceedances should not be viewed as an ordinary cost of doing business.

Implementation

MEPNS, in coordination with the Ministries of Economy, Finance, and Justice, should submit proposed changes in the Law on Environmental Protection to the Cabinet of Ministers for recommendation to Parliament (Verkhovna Rada).

Recommendation: Use a uniform national multiplier for exceedances

Ukraine should consider simplifying the calculation of non-compliance charges and eliminating local discretion over the choice of the multipliers. As illustrated in Table 1, most countries use a simple multiplier of the basic charge rate to assess non-compliance penalties. Multipliers of 5 to 10 times the regular charge rate are common.

Implementation

A uniform multiplier for exceedances should be legislated by the Ukrainian Parliament (Verkhovna Rada), since it would entail changes to the Law on Local Self-Government. A relevant proposal should be introduced, through the Cabinet of Ministers, to the parliamentary committees by MEPNS, in coordination with the Ministries of Economy, Finance, and Justice.

The key factor in setting the rate for non-compliance penalties is to ensure that it is less expensive to comply than to incur control costs to meet requirements. While protection of the environment is the responsibility of local authorities in accordance with the Law on Local Self-Government, lack of flexibility in setting the charge rate on exceedances should not be construed as usurping local authority. Rather, it is important to establish penalties as a national deterrent to non-compliance; otherwise, there will be an absence of a "level playing field" in Ukraine that could create perverse incentives for foreign investment. Multipliers might vary between water and air, but a uniform multiplier of the basic charge rate should be established.

2.2 Compensation for Losses

In addition to exceedance charges, Ukraine also levies so-called "compensation for losses" (CFL) which, for air and water pollution, is an additional non-compliance charge for violations of emission standards (typically violations of 20 or 30-minute concentration limits). The rationale for CFL is that violations of short interval concentration standards result in damages to human health and the environment even if the facility complies with annual limits. Obviously, if a facility violates the 24-hour standard throughout the year, it will also exceed annual allowable limits.

Although the penalty is called compensation for losses, there are several fundamental distinctions between CFL and penalties for damage liability (which are discussed in Section 2.3):

- 1) CFL matters are handled administratively by the managers of the pollution charge system, while liability matters are judicially determined by the courts.
- 2) CFL is an economic punishment for exceedance of a permit limit, while liability matters represent an economic punishment for exceedance of a permit limit or standard whose exceedance leads to damages to persons, property, or the environment.
- 3) CFL compensation is retained by the state, while liability compensation may be received by individuals (unless the state is suing to remediate damage to natural resources).

CFL rules are generally invoked by inspectors who discover that discharges exceed permit limits. This non-compliance charge, as pointed out in Section 1.2 of the Stage 2 Report, is designed to obtain compensation for losses incurred by the state on behalf of society as a whole. The state, after assessing and receiving this non-compliance charge (or penalty), uses the revenue to support environmental protection activities and to increase salaries of the inspectorate staff. The nature of the charge as a *penalty* is further underscored by the requirement that the charge must be paid from an enterprise's profit, i.e., the charge is not deductible from taxes as a cost of doing business.

In concept, there is very little difference between a CFL penalty and an exceedance charge, which is calculated at the end of the year. The CFL is imposed for violations of the emission standard (in grams per second), which is directly linked to the annual loading limit (in tons per year) whose exceedance is penalized by an exceedance charge. The revenues from both CFL and exceedance charges are channeled to environmental funds.

The CFL charge is imposed upon discovery of the exceedance -- in other words, at the time of the violation -- but is levied for the entire duration of the period (estimated by the inspector) during which the exceedance occurred. CFL may be calculated for up to three months in retrospect.

However, an enterprise does not necessarily have to pay the full CFL non-compliance charge. The system for imposing penalties for exceedance of the short-term emission standard and the annual loading limit is designed in a way that avoids penalizing the enterprise twice for the same emissions. Calculating the CFL amount due from the enterprise, the inspector also calculates the exceedance charge prorated for the period of violation. The amount of non-compliance charge

the enterprise must pay is equal to the CFL amount minus the amount of the prorated exceedance charge. (Some commentators have noted that in practice, the CFL is often imposed in full, without subtraction of the exceedance charge.)

The linkage between CFL and exceedance charges constitutes a conceptual weakness in the system at several levels:

1. Annual loading limits can undermine the public health dimension of the pollution charge system because the system tends to emphasize ease of charge calculations at the expense of controlling discharges. (The enterprise can have massive releases of pollution thereby threatening public health and still not exceed the annual loading limit, if its operations are down for a certain period of time during the year.)
2. The imposition of CFL penalties may turn out to be a wasted administrative exercise if they are reduced or forgiven due to the subtraction of the exceedance charge.
3. CFL penalties send an ambiguous message to enterprises: you may be in violation, but, on the other hand, you may not, depending on the total annual volume of discharges.

Recommendation: *Revise the CFL non-compliance charge so as to make it a fine (and that is what it should be called) payable immediately for a violation of a discharge standard, and disassociate it from the exceedance charge levied on an annual basis.*

The law should be amended to allow the imposition of a "fine" against an enterprise (presently limited to *persons* under the Administrative Code, per Section 2.2.2 of the Stage 2 Report). The fine should be levied for a violation of an emission standard and should be high enough to serve as a deterrent against short-term intensive releases of pollution. The fine must be imposed for violation of an emission standard for any pollutant, no matter whether there is a pollution charge for that pollutant (see Section 1.1.2 herein). The formula for calculating the fine should be simple and account for the severity of the violation (e.g., by having a uniform multiplier for violations of more than 1.5 times the emission standard) and the pollutant's class of toxicity.

The current practice of retrospective calculation of non-compliance charges must be eliminated. The fine should be imposed on a daily basis, from the first day on which the inspector detects the violation until the day on which the violation is corrected. The enterprise in violation should be inspected frequently to check whether the violation has been corrected.

Implementation

This recommendation should be packaged and presented with the foregoing recommendations on exceedances by MEPNS, in coordination with the Ministries of Economy, Finance, and Justice. The information presented to the Cabinet of Ministers should emphasize the following rationale:

The fine is designed to discourage spills and upsets through better management and sends a message that public health and the environment will be protected. This is an *active* enforcement

mechanism. The fine should be payable immediately and *not be reduced by the amount of the exceedance charge*.

(This recommendation is not intended to include other CFL/fining provisions in the law such as those referenced in the Stage 2 Report at, for example, Section 2.8 for fisheries, Section 2.9 for forestry, Section 2.11 for land use, and Section 2.12 for biodiversity.)

The current exceedance charge should stay in place. It is consistent with the economic dimension of the pollution charge system by promoting the notion of economic consequences for sub-standard environmental management over time. The exceedance charge serves to reinforce the fine recommendation above and acts as a second disincentive to exceed the emission standard. The exceedance charge may continue to be calculated at year's end. Thus, the enforceable discharge standard may be converted to a loading limit for purposes of calculating the annual exceedance. This a *passive* enforcement mechanism.

2.3 Liability

Liability rules serve a dual purpose in environmental management. First, in the event of an accidental release of pollutants or hazardous material into air or water, liability rules elaborate the polluter's responsibilities for compensating victims (third party damages), cleaning up the release, and compensating the state as trustee for the environment (natural resource damages). Second, liability rules may also lead facilities to take additional precautions and invest in preventive measures. Thus, liability rules may encourage facilities to invest in controls, even if not required by regulation. The liability system in Ukraine is outlined at Section 2.13 of the Stage 2 Report.

Sections 2.1 and 2.2 above outline non-compliance penalties that may be administratively imposed by the managers of the pollution charge system and their inspectors. Those penalties are imposed for the administrative violation of a standard. No further consequence of that violation need be shown in order to impose such penalties.

But a remedy must also be available for actual *damages* -- for example, to persons (from perhaps a toxic exposure), to property (a farmer's soil or groundwater supply contaminated by heavy metals from a nearby factory), or to natural resources (a fish kill or the contamination of an aquifer relied on by a town for drinking water supplies). The legal literature of many countries contains countless other examples. Such damages may result from the mismanagement of a permitted enterprise or from the culpable action of any individual.

Fortunately, Ukraine already has the legal structure in place to further this strategy. These provisions are found in Article 9 of the Law of Ukraine on Environmental Protection and in various provisions of the Civil Procedure Code. Citizens may bring private lawsuits against state bodies, enterprises, organizations, and other citizens for damage to their health or property. And enterprises are held accountable for damages for the actions of their employees (agency law). The venue for such lawsuits is the Arbitration Court.

Interestingly, the liability standard is strict. That is, the aggrieved party (the plaintiff) has a presumption of liability in his favor if causation can be established between the plaintiff's damage and the activities of the defendant. (The team infers the conclusion on causation from

secondary sources.) Once causation is established, the burden of proof shifts to the defendant to *disprove* its responsibility for the damages. This presumption in the law in favor of the plaintiff reflects governmental policy to ease the burden of an aggrieved party to present an actionable case before a court.

Besides authorizing causes of action for environmental damages, the law also addresses questions of (in addition to burden of proof) agency, exculpatory *force majeure*, measure of damages, creditors' remedies, successors in interest, and statute of limitations.

In Ukraine, liability provisions are currently used mostly by the government to seek damages from polluting enterprises. Observers interviewed by the team note that inspectors representing the state are successful in suing for damages about 50% of the time, receiving court awards of, on average, 30%.

Recommendation: *Encourage the use of the liability system for damages to persons, property, and the environment.*

By and large, the existing liability provisions in Ukraine provide a satisfactory legal basis to advance this aspect of the compliance strategy. The team suggests, however, a change to the creditor's remedy along the same lines as discussed in Section 1.3 herein. While the defendant's bank account can be made accessible by order of the Arbitration Court, and this is likely to be effective against major enterprises, the team nevertheless recommends that provisions be added that authorize other forms of property attachment.

The liability strategy may be pursued by individuals who have suffered personal or property damage. But it may also be pursued, as it has already been done in some instances, by government representatives seeking *remediation* of contaminated soils or drinking water sources, in the public interest, or in defense of the nation's patrimony.

Implementation

What remains is that the liability strategy be more aggressively pursued by both individuals and the government. An economy in transition like Ukraine should increasingly move away from the "compensation for loss" concept where the government seeks damages on behalf of society. This is appropriate in major cases of damage to natural resources where there is an important need for environmental remediation. For personal and property damage, however, individuals should be encouraged to assert their rights through liability laws.

Government should encourage the assertion of such rights in a variety of ways. MEPNS and the Ministry of Justice should coordinate a program that has at least three component parts:

1. Review the current laws to ensure that the legal tools to perfect claims are adequate. For example, the burden of causation can often be difficult to prove by an individual plaintiff. "Discovery" laws enabling plaintiffs to access company data on discharges and their toxic constituents, the condition of pollution control equipment, and the quality of the enterprise's surveillance (reporting and recordkeeping) would be very useful.

In the U.S., public "right to know" laws where enterprises are required to disclose their use of toxic substances in public reports have had a dramatic effect on the use of such substances. Enterprises have been more willing to engage in pollution prevention exercises, stimulating process changes and materials substitution, in an effort to demonstrate their environmental sensitivities to the neighboring communities.

Thus, periodic reviews of environmental liability laws can have a beneficial effect on environmental management.

2. Sponsor periodic workshops for lawyers and NGOs on new trends in the law and how to take advantage of them. Also develop workshops on "creditors' remedies" to ensure that an Arbitration Court judgment is not in the end an empty gesture, but leads to the satisfaction of money damages through appropriate implementation procedures.
3. In many legal systems, defendant enterprises often succeed in delaying an individual's "day in court" through procedural delaying tactics. MEPNS and the Ministry of Justice should establish "fast track" procedures (such as separate dockets) to defeat the tactics that lead to the complaint, "Justice delayed is justice denied." The achievement of such "fast track" procedures should then be adequately publicized.

CHAPTER 3

ENVIRONMENTAL FUNDS

As noted in the Stage 2 Report, Ukraine currently has a system of Extra-Budgetary Funds for Environmental Protection. Pollution charge revenue collected at the local level is distributed to extra-budgetary funds at the local level, oblast level and national level. These funds also receive a share of other revenues from CFL payments and other fines (see Chapter 3 of the Stage 2 Report). Overall, the total revenue received by funds was less than US\$15 million in 1996. The combination of low charge rates, poor collection rates and large number of funds which divide these revenues leads to very limited working capital in all but a few cities and oblasts. Fund disbursements are controlled by local executive bodies, although regional MEPNS offices make recommendations on how these revenues should be disbursed. The existing system does not include provisions for a formal application process, project cycle management, transparent procedures or accountability.

MEPNS has recently proposed changes in the allocation in the revenues from pollution charges and fines that dramatically reduce the share of local and municipal funds (from 70% to 20%) and increases the revenue bases for the environmental funds at the national (from 10% to 30%) and oblast (from 20% to 50%) levels. The new system of environmental funds creates an opportunity for strengthening the management of public resources for environmental improvements, creating competitive options for enterprises to finance environmental investments, stimulating higher collection rates for pollution charges (through recirculation of revenues for investment), and potentially, creating a way to expand participation of domestic and foreign financial institutions in funding environmental improvements in Ukraine.

It would be optimal to consolidate the pollution charge and fine revenues at the oblast and national levels only, as was initially proposed by MEPNS. However, at the present time, it proved to be politically difficult to persuade local authorities to entirely give up their control over spending of environmental funds revenues in their areas of jurisdiction. There is an understanding at MEPNS that further consolidation of environmental funds should be pursued.

Recommendation: *Strengthen the institutional and financial aspects of the environmental funds system in Ukraine, on the basis of the CEE countries' experience, focusing on management structure, decision-making procedures, disbursement of funds, accountability, and leveraging of revenue.*

Ukraine should review the structure of national and regional funds in CEE countries and explore options for organizing and managing environmental funds at the national and oblast levels in Ukraine.

The St. Petersburg Guidelines (developed by the Environmental Action Plan (EAP) Task Force as part of preparation for the 1995 Environment for Europe Conference in Sofia, Bulgaria) provide a strong basis for creating environmental funds with attractive incentives to enterprises

to request financing support for environmental investments and recommendations for effective management of public resources, transparency and accountability for funding decisions. There is substantial experience in the CEE environmental funds in leveraging public resources and expanding the participation of commercial capital in the environmental sector. As noted previously, the availability of funds for financing enterprises' environmental investments also can enhance collection rates for pollution charges if payment of charges is a precondition for accessing the resources of the environmental funds.

One caveat is required at the outset of the discussion on strengthening these funds. Given there are 26 oblast funds and a national fund proposed, the amount of revenue that was transferred to funds in 1996 - about US\$15 million would imply average working capital of US\$400,000 for each oblast ecological fund and approximately US\$4.5 million for the National Ecological Fund. Most of the recommended measures for strengthening these funds would be unnecessary and not cost-effective except for the largest oblast funds and the national fund. Thus, a key precondition for establishing an effective system of regional and national funds is the expansion of revenue sources, either through improved collection efficiency and/or higher charge rates or by earmarking other sources of revenue for the funds.

Implementation

A relevant legislative initiative should be developed by MEPNS in coordination with the Ministries of Economy, Finance, and Justice and forwarded to the Cabinet of Ministers and further to the Verkhovna Rada in order to make changes to the Law on Environmental Protection, the Law on Local Self-Government, and other legislative acts.

The development of environmental funds, consistent with best practices, involves an effective management structure, combined with comprehensive project cycle and accountability procedures, as well as innovative financial management. The five sub-sections of this implementation plan provide options and recommendations for an effective management structure, decision-making procedures, disbursement of funds, accountability, and leveraging the funds' revenues. These issues should be addressed and resolved.

Management Structure

The first steps in setting up an environmental fund include establishing the legal basis for the fund, ensuring that any impediments to the flow of revenues and disbursements are resolved, and developing a management structure. Most funds in CEE countries are subordinate to the Ministry of Environment. In these funds, the Minister or his or her designee is often empowered to make decisions on how the fund's resources are to be allocated. One of the major limitations on the effectiveness of funds which are subordinate to the Ministry is that the fund may be unable to pay salaries for highly skilled staff because of low civil service salaries.

MEPNS has indicated that the new environmental funds would be set up as independent legal entities, in line with the model adopted in Poland for the National and Regional Environmental Funds. Independent environmental funds will have more control over collection and disbursement of revenues. Independence will also allow the funds to pay higher salaries and recruit more skilled people. However, since the fund will manage public resources, a number of provisions must be introduced to ensure accountability and transparency. Also, there should be

some accommodation for the Ministry of Environment and local environmental authorities to have input into the development of the fund's spending priorities and selection criteria.

Recently, other CEE countries have struggled to set up environmental funds as independent legal entities. One of the major obstacles has been existing laws on foundations and other legal forms that would be able to operate as non-profit funds. In Lithuania, the creation of the national environmental fund as an independent legal entity was abandoned while a similar effort to create an independent fund in Latvia was successful. Even if the fund is subordinate to or sponsored by the Ministry, there may be measures that can be taken to establish an independent character for the fund (more discussion below).

It is recognized that it may not be possible at the present time, due to political limitations, to convert the environmental funds in Ukraine into independent legal entities. However, their current status should not preclude the improvements in the funds' management structure.

The second requirement for the fund is to establish mechanisms for transferring revenues to and disbursing money from the fund. Since the fund is handling public resources, the government and the fund must establish auditing and accounting procedures for the fund, to ensure resources are obligated for their intended purposes. The fund must be able to establish bank accounts, earn interest on current balances, and be able to carry over cash balances from one year to another.

The most important need is to establish an effective structure for managing the fund's resources. In most CEE funds, a dual board system is utilized. The management or executive board is responsible for the day-to-day management of the fund's resources, application review process, negotiations with successful applicants and monitoring of projects. The supervisory board (or council) provides oversight of the fund's activities, makes final decisions on which projects to finance, approves the annual report and administrative procedures proposed by the fund's managers. Typically, supervisory board members are appointed for limited terms. The key to an effective system of checks and balances and credible oversight by the supervisory board is the process by which appointments are made to the supervisory board. Poland provides illustrations of two approaches to supervisory board appointments. At the national level, the Minister of Environment makes all appointments to the supervisory board. At the regional level, there is better balance and less potential for political manipulation since the supervisory council members are selected by several different governmental (and non-governmental) bodies.

Funds in Latvia and Lithuania also utilize broad-based appointments to their supervisory board. It is recommended that Ukraine opt for a process of appointing supervisory board members that gives a number of governmental and non-governmental bodies the power to select board members, thereby promoting broad-based participation.

The selection of the fund's director or head of the management board is often made by the Minister of Environment for national funds or by regional government officials. Provided the Minister does not also control all appointments to the supervisory board, this appointment process provides a close link between the Ministry and the fund without excessive political control over the fund's decision-making activities.

A number of other structural issues must be addressed in organizing the fund. Foremost, the fund must determine the size of the staff and mix of skills required to carry out its activities. The

amount of working capital of the fund and disbursement policies (types of assistance, size of awards, etc.) will have a bearing on staffing issues, especially the mix of skills. For example, if the fund plans to disburse only grants, in-house financial appraisal capabilities will not be needed. Another issue is whether to establish formal relationships between the regional funds and the national fund. For example, in Poland, there are both formal links and informal cooperation between the regional funds and the National Fund. Formally, one member of the regional fund's supervisory council is appointed by National Fund. Informally, the regional and national funds share information on projects and often cooperate in co-financing projects. Finally, the management structure, policies, and procedures should provide adequate flexibility to allow the fund to shift priorities, introduce new disbursement mechanisms, and expand the fund's operations as resources permit.

Decision-Making Procedures

The business of environmental funds is to finance environmental activities and investments. CEE funds employ an application process through which project proponents request support for expenditures to reduce pollution. Funds must develop financing priorities, establish eligibility rules, and elaborate criteria for selecting projects. In addition, funds must develop transparent procedures for managing the "project cycle."

Funds have limited working capital which can be used to support environmental activities. Most funds support investment projects and may also support purchases of environmental monitoring equipment, basic or applied research, NGO activities, and environmental education and public awareness programs. Before a fund can design selection criteria and procedures, it must set priorities for the types of projects it will finance. These priorities may simply identify the types of projects, specify general plans for allocating certain shares of revenues to project categories (earmarking), or stipulate the sizes of projects the fund plans to support. For example, the Latvian Environmental Investment Fund will only finance environmental improvements, whereas the Latvian National Fund can finance environmental improvements as well as other environmental activities such as research, training, and education.

Generally, all public and private entities and individuals within the jurisdiction (national or regional) are eligible to submit applications to funds. As discussed earlier, funds can contribute to improved collection rates for pollution charges by linking these payments to eligibility requirements to receive financial support from the fund. Depending on the nature of revenue sources, funds may limit access to domestic enterprises or joint ventures; in reality most foreign-based enterprises are well-capitalized and don't require assistance from domestic environmental funds.

Selection criteria are an important element of the fund's decision-making policies. The elaboration of project selection criteria makes the operations of the fund more transparent to applicants and to the general public. The existence and use of selection criteria will often be required before donors will assist in capitalizing an environmental fund (for example, funds in Latvia, Lithuania, and Slovenia). Selection criteria also help applicants to prepare their proposals and, in the event their projects are rejected, provide a basis for the fund to convey reasons for rejection. Generally, selection criteria include environmental, economic, and technical factors. Since public resources are disbursed by funds, some measure of cost-effectiveness or net

environmental benefits should be incorporated into selection criteria, although this may be difficult in practice because of the diversity of projects to be reviewed.

The project cycle describes the process by which the fund reviews, selects, and finances applications. The project cycle includes five steps:

- 1) *Application process.* Funds may use a single application or a two-step application process such as the approach used by the Polish EcoFund (established through the debt-for-environment swap program). The fund's staff checks the application for completeness, verifies the applicant's eligibility, and requests additional information or revisions of the application as needed.
- 2) *Project appraisal and selection.* Staff, sometimes with the assistance of outside experts, evaluate applications. Recommendations are made by the management board and the supervisory board makes the final decision.
- 3) *Negotiations and financial awards.* The fund's management board prepares a contract and negotiations contract provisions such as schedule of disbursements and monitoring and reporting requirements. The fund or its financial intermediary disburses money to the applicant.
- 4) *Monitoring and implementation.* The fund's staff follows the applicant's progress in implementing the project.
- 5) *Evaluation.* Ideally, the fund would make a determination if the project, once completed, actually achieves the environmental improvements described in the application. This evaluation is seldom conducted by environmental funds in CEE countries but is standard practice among international financial institutions such as the World Bank and EBRD.

The design of the project cycle should be adapted to the expected volume of applications, the working capital of the fund and the staff resources. For example, for small regional funds which disburse only small amounts of funding, simpler application and appraisal procedures would be appropriate. However, if it is anticipated that regional and the national funds will often support the same projects, it may be appropriate to standardize applications. In any event, the introduction of an application and appraisal process will require a significant public awareness effort among potential applicants and training for fund staff and applicants.

Disbursement

Funds must address two primary disbursement issues: the types of disbursement mechanisms and share of project costs to be financed. There are three common disbursement mechanisms that are used by CEE funds.

Grants do not require repayment by the applicant and are therefore the most attractive option for applicants. The use of grants requires less attention in the appraisal process to financial characteristics of the applicant. If one of the fund's goals is to become a "revolving" fund, where a portion of the working capital is replenished, the fund would need to disburse money using

“soft” loans. Soft loans are loans which include terms and conditions that are more attractive than those available in commercial credit markets. Typically, the loans are softened by reducing the interest rate. They may also include longer payback periods or grace periods that would not be available from financial intermediaries. While soft loans will allow a fund to revolve and grow (assuming there is a stable source of revenue and loans are repaid), their use increases the complexity of the application and appraisal process, and requires staff skilled in financial appraisal. This last problem may be overcome by contracting with banks to conduct the financial appraisals and manage the fund’s soft loans. Alternatively, the fund may simply award *interest subsidies*. The applicant would secure financing from participating commercial lenders. The fund would approve a lower interest rate for the applicant and compensate the bank for its loss in interest from not loaning at prevailing market rates of interest. The use of interest subsidies does not allow the fund to revolve, but may enable the fund to support many more projects since the interest subsidies are substantially less than the cost of providing the entire value of the loan. (Another possible disbursement mechanism is loan guarantees, which is a commitment by the fund to reimburse the lender if the borrower defaults on the loan. However, loan guarantees would tie up part of the fund’s money, which is not advisable under the current conditions of low fund revenues.)

The second disbursement issue concerns the share of project costs to be financed by the fund. Obviously, if a fund provides 100% of project financing, it will be able to support fewer projects. On the other hand, if the share of financing covered by the fund is very small, applicants may be unable to cover the remaining “gap” from other sources. The fund must make an assessment of general economic conditions and capital markets in deciding on co-financing levels. Early in the transition to market economies, higher co-financing levels may be justified because of weakness of enterprises, the lack of environmental enforcement capabilities and market failures in capital markets. However, the fund should be flexible in reviewing co-financing levels to ensure that its co-financing levels do not hinder the development of market solutions.

Accountability

Funds must also develop procedures to ensure that they are accountable for the selection and award of projects and the disbursement of funds. Funds should also develop capabilities to communicate with applicants, other domestic funds, and financial intermediaries. Most CEE funds prepare an annual report that describes the funds activities for the year. Included with the annual report should be summary information on the number and types of applications received, lists of rejected and accepted projects, amount of money disbursed, and administrative costs of the fund. Typically, audits of fund activities are conducted by independent auditing firms and these reports are attached to the annual report. The fund should also communicate with applicants of rejected projects, indicating the reason for rejecting their projects. These communications should also be part of the public record.

Leveraging of Revenue

The revenues from pollution charges at their present rates are unable to cover a variety of needs for financing significant environmental projects in Ukraine.

The proposed amendments to the Ukrainian Law on Environmental Protection may be construed as authorizing another possible source of revenues for the environmental funds.

The fund could take a loan from a bank (national or international) or issue bonds, using its revenues as collateral, and then invest it into an environmental facility that would generate future revenues through user charges. These user charges would then be used to repay the loan with any excess, if any, generating additional revenues for the Fund. An example of such a scenario (which is called 'leveraging') is investment in a wastewater treatment facility. Enterprises and residents using this facility would pay user charges which would, in turn, be used for debt service.

It is proposed that Ukraine determine the potential for 'leveraging' pollution charge revenues to achieve further environmental improvement. It is necessary to:

1. Determine the amount of funds available from pollution charges (after administrative cost recovery), considering the changes in charge rates and improvements in collection practices discussed in Chapter 1.
2. Identify potential capital markets as sources for loans or bond issues.
3. Analyze an effective and efficient debt service plan if financing occurs through capital markets.

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