APPROACH TO THE INTRODUCTION OF INTEGRATED ENVIRONMENTAL PERMITTING IN UKRAINE:
Case Study

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CONTENTS

ACRONYMS

BAT	Best Available Techniques
BREF	BAT Reference Document
CEE	Central and Eastern Europe
EC	European Commission
EIA	Environmental Impact Assessment
EECCA	Eastern Europe, Caucasus and Central Asia
ELV	Emission Limit Value
EMS	Environmental Management System
EQS	Environmental Quality Standards
EU	European Union
GBR	General Binding Rule
HMEI	Heavy Metals Emission Inventory
IPD	Integrated Permitting Department
IPPC	Integrated Pollution Prevention and Control
IPWG	Integrated Permitting Working Group
MAP	Ministry of Agricultural Policy
MEP	Ministry of Environmental Protection
MF	Ministry of Finance
MFE	Ministry of Fuel and Energy
MH	Ministry of Health
MIP	Ministry of Industrial policy
OECD	Organisation for Economic Cooperation and Development
PA	Permitting Authority
ROMEP	Regional Offices of the Ministry of Environmental Protection
RO MH	Regional Offices of the Ministry of Health
SAER	State Air Emission Register

1. INTRODUCTION

The aim of this case study is to analyse the conditions and make recommendations for a step-by-step introduction of an integrated environmental permitting system for specific manufacturing sectors in Ukraine. The case study is conceptually based on the Integrated Environmental Permitting Guidelines for EECCA countries developed by the EAP Task Force Secretariat. In particular, the case study follows the methodology described in Chapter VI of the Guidelines, "Strategic Approach to the Gradual Transition to Integrated Permitting for Large Industry" and should be read in conjunction with that document. The approaches to introducing integrated environmental permitting in Ukraine that are proposed in this document are based on national experiences with introducing the EU IPPC Directive (96/61/EC) in EU Member States, as well as an assessment of the current system of environmental permitting in Ukraine.

The Ukrainian government is currently considering a profound reform of its environmental permitting system. The leading role in the development of a new system has been assumed by the Air Protection Department of the Ministry of Environmental Protection (MEP). A new technology-oriented approach to permitting or pollutant emissions into the air was declared in the Atmospheric Air Protection Law of 2001, followed by a number of implementing Decisions of the Cabinet of Ministers.

The first steps toward the implementation of integrated permitting in Ukraine were taken in connection with the World Bank's technical assistance project in 2003. The project stimulated the creation of an Inter-ministerial Working Group and the development of draft pilot permit applications for three Ukrainian industrial installations.

The present study focuses on three important aspects of designing the new permitting system:

- the scope of regulated industry,
- institutional issues, and
- the time schedule of introducing the new system.

Section 2 briefly discusses the current Ukrainian permitting system and identifies its strengths and weaknesses with respect to the potential transition to integrated permitting. Section 2 also presents the main directions for changing the current permitting system based on the results of the June 2004 fact-finding mission in Kiev while taking into consideration issues raised during earlier technical assistance projects in Ukraine and those contained in Ukraine's environmental policy documents.

Section 3 suggests criteria for selection of industrial sectors that would be subject to integrated permitting requirements and makes preliminary recommendations on the scope of application of the new system. Section 4 discusses possible regulatory competencies and respective institutional resources that would need to be established in Ukraine to implement the integrated permitting system. Section 5 proposes a timeline for the preparatory stage of the new permitting system and a transitory phase-in schedule for different industrial sectors.

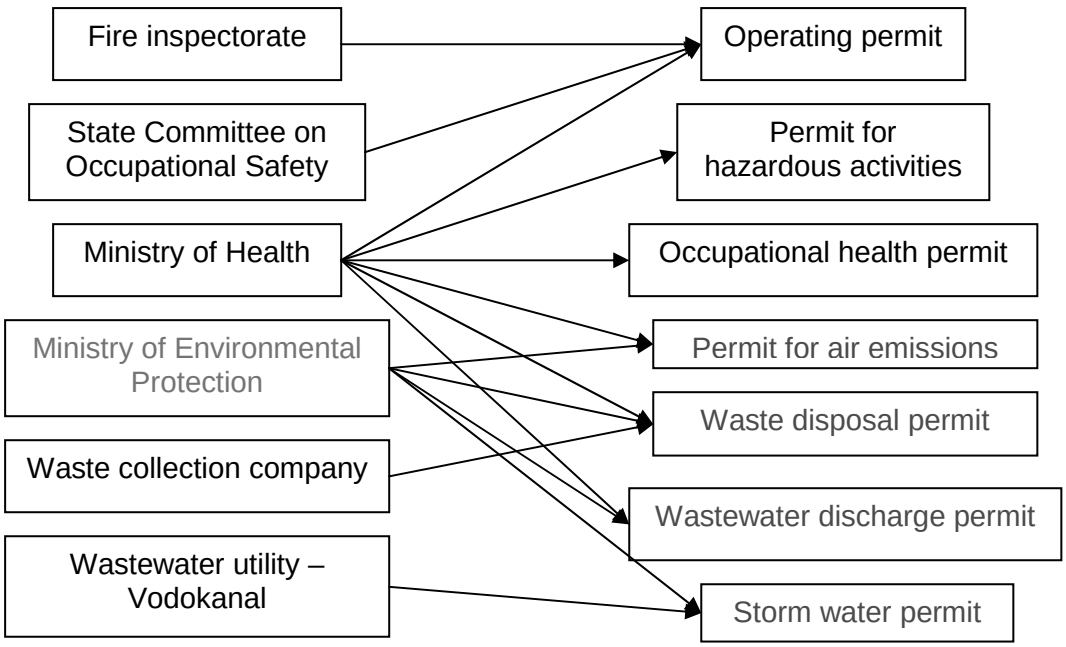
2. EXISTING PERMITTING SYSTEM IN UKRAINE AND POTENTIAL FOR ITS IMPROVEMENT

2.1 Brief Description and Analysis of the Existing System

The current environmental permitting system in Ukraine is based on a medium-specific approach, with separate regulations related to air and water protection and waste management. All sources of air and water pollution are required to have valid permits which stipulate maximum allowable values of specific parameters of emissions to air and discharges to water, as well as monitoring requirements. There are also separate permits specifying limits for waste storage and disposal (which, in the virtual absence of waste treatment practices, amounts to limits on waste generation).

The permitting system is institutionally complex: operators need a minimum of seven environmental or health-related permits or approvals from six different authorities. Some permits/approvals (e.g., waste generation and disposal limits) require endorsement of up to three distinct bodies (see Figure 1 below). Permits for air emissions, wastewater discharges and waste generation are issued by regional offices of the Ministry of Environmental Protection (ROMEPs), while the Ministry of Health also plays a very important consultation role. Permits are reviewed every two to five years, which requires companies to update all relevant documents, including modelling reports demonstrating compliance with applicable environmental quality standards.

Figure 1. Institutional Responsibilities for Environment-Related Permitting in Ukraine



Note: The list of permits and approvals presented is based on the information obtained from an existing paint production facility in the Kiev oblast.

The existing permitting system is characterised by several regulatory and institutional weaknesses.

Regulatory weaknesses:

- Fragmented and confusing regulatory framework: requirements for installations are laid down in various pieces of primary and secondary legislation, which are rarely interlinked. In extreme cases, compliance with one requirement can be incompatible with other requirements, as it is technically impossible to fulfil both at the same time. Sometimes the same requirements are interpreted differently by different authorities.

- Environmental permitting requirements and procedures are not proportionate to the polluting impact of installations: there is no differentiation between small and large sources.

- The environmental permitting process does not consider the overall environmental impact of an installation and emphasises medium-specific, end-of-pipe technological solutions rather than pollution prevention.

- Environmental permits are usually limited to medium-specific ELVs and do not include conditions for energy efficiency, use of raw materials and water, emergency preparedness, decommissioning, reporting and accident notification, etc.

- There is a lack of economic and technical assessment of the feasibility of permit requirements.

- There is virtually no public involvement in the permitting process.

Institutional weaknesses:

- The coordination between the competent authorities is weak, which means that the operator or, more often, contracted consultants on his behalf have to go around all relevant agencies and fulfil their particular requirements before obtaining the necessary authorisations.

- Lack of cooperation between environmental permitting authorities and environmental inspectorates in setting and ensuring compliance with permit requirements.

- A high administrative burden on the limited staff of the permitting authorities is caused by a large number of installations, large and small, renewing their permits very frequently. The heavy work load is aggravated by the regulators' limited knowledge of the regulated community and the insufficient remuneration of environmental officers.

- The environmental authorities receive a lot of information on polluters through regular environmental and statistical reporting but manage it poorly and hardly use it in decision making.

2.2 Potential for Introducing Integrated Permitting

The introduction of integrated permitting in Ukraine is part of the country's political orientation toward convergence with the EU legislation, including environmental requirements. The reform process has already started with the MEP making step-by-step adjustments toward improving the regulatory system. The MEP's Air Protection Department has amended the relevant implementing regulations several times in recent years in an effort to streamline the air emission permitting process and introduce some elements of technique-based regulation. The MEP has actively supported several international technical

assistance projects designed to prepare the implementation of integrated permitting. Since 2002, the projects carried out with funding from the EU and the World Bank have focused on a regulatory gap analysis between the Ukrainian and EU permitting systems and the potential for BAT implementation in selected industrial sectors in Ukraine. Representatives of several government authorities are part of the Interagency Working Group on integrated environmental permitting created in 2003. The high level of technical knowledge and experience among government officials and experts from established research institutes represents a good human capacity resource for preparing and implementing an integrated permitting system.

However, there are also serious constraints to the reform process. The first and most important one is weak high-level political support for environmental regulatory reforms stemming from the low priority of environmental management on the government's agenda in comparison with economic and social issues. The unclear priorities of Ukraine's environmental policy also impair reform progress, resulting in endless discussions within the MEP and with other ministries. There is also fear of the proposed changes within the government due to both the lack of understanding of the new system and its benefits and costs on the one hand and the long-established bureaucratic interests on the other.

Big potential problems are the insufficient resources for administering the new permitting system and the poor financial condition of the Ukrainian industry that will hamper necessary investments in BAT. All of these factors call for careful planning of the transition to integrated permitting.

3. SCOPE OF APPLICATION OF INTEGRATED PERMITTING

The integrated environmental permitting requirements should generally apply to large pollution sources, while SMEs should be regulated through a much simpler process. This section aims to define industrial sectors (and appropriate capacity thresholds for certain industrial activities) that will be covered by the integrated permitting system, using the scope of the EU IPPC Directive as a benchmark. The approach for setting the scope of regulated industrial activities comprises the following steps:

- Identifying criteria for selecting the sectors to be regulated under integrated permitting;
- Describing available sources of information in Ukraine that constitute the basis of the selection; and
- Defining the preliminary scope and suggesting activities for its finalisation.

3.1 Criteria for Industrial Sector Selection

Industrial sectors/activities whose environmental performance can be improved through integrated regulation are characterised by the following criteria:

- large production capacity;
- significant adverse impact on more than one environmental medium;
- risk of accidents which can have a significant negative environmental impact (in the EU, these are regulated by the Seveso Directive on the production and of toxic substances); and
- generation of large amounts of hazardous waste.

The application of these criteria requires defining production capacity, significant impact, accident risk level, and large amount of hazardous waste. For practical reasons, this case study uses the list of categories of industrial activities in Annex I of the IPPC Directive as a starting point (see Table 3).

3.2 Sources of Information for an Inventory of Installations

An inventory of all installations in Ukraine that fall under the preliminary categories of the scope of integrated permitting should ideally be developed. This case study used industrial activity information from the following sources in order to approximate such an inventory[1]:

- State Air Emission Register;

[1] The Ministry of Industrial Policy, the Ministry of Agricultural Policy, and the State Environmental Inspection are also supposed to possess valuable relevant information, but it could not be obtained by the consultants.

- Heavy Metals Emission Inventory;
- List of landfills from the National Centre for Hazardous Waste Management;
- Data on large combustion plants from the Coal Energy Technology Institute;
- Enterprise register from the State Statistical Committee.

The State Air Emissions Register (SAER) contains data on plants and corresponding sources of air emissions[2] reported to the permitting authorities (RO MEP). For the purpose of selecting sectors, the data can be sorted by economic activities based on the NACE classification[3]. The total number of Ukrainian facilities in SAER is 15,123 as reported for the year 2003. In all these plants there were 336,301 sources of air emissions, including fugitive sources. A table of facilities sorted by economic activity (for selected sectors) is presented in Annex 1. Table 2 below contains the total figures for broad categories of economic activities.

Table 2. Summary of SAER Facility Data for Main Economic Activities

NACE code	Description of activity	Number of plants with air emissions in 2003
Section A	Agriculture, hunting and forestry	949
Section B	Fishing	46
Section C	Mining and quarrying	503
Section D	Manufacturing	6,226
Section E	Electricity, gas and water supply	951
Total		**8,675**

The Heavy Metals Emission Inventory contains data on plants that emit heavy metals into the air categorized by SNAP[4] code. In 2003, data on 1,884 emission sources were reported. Sources of heavy metals are good candidates for regulation under the integrated permitting regime because of their significant environmental impact.

The list of landfills obtained from the National Centre for Hazardous Waste Management contains 483 municipal solid waste landfills (which corresponds to category 5.3 of the IPPC Annex I). For comparison, the total number of hazardous and municipal solid waste landfills listed in the Danish study "Environment in Ukraine: Problems and Challenges" (DANCEE 2003) is 1,900.

The Coal Energy Technology Institute prepared a detailed list of 58 enterprises operating ***large combustion plants*** with capacity of over 50MW, comprising from 2 to 20 boilers per enterprise.

[2] Emission sources in Ukraine (as in other EECCA countries, as a legacy of Soviet regulations) are defined not as installations or production processes, like in the EU, but as stacks and other points of discharge, without a proper link to the corresponding techniques.

[3] NACE – Classification of Economic Activities in the European Community – also corresponds to ISIC, the International Standard Industrial Classification of all economic activities.

[4] The Selected Nomenclature for Air Pollution (SNAP) is used, among others, by the European Environment Agency.

The State Statistical Committee (Goscomstat), which maintains the ***Enterprise Register***, collects enterprise-specific data on air and water pollution, generation of hazardous waste, as well as fuel consumption and industrial output. Full air emission data for 2004 (in accordance to an improved 2TP reporting format) will be provided by enterprises in the early 2005. Data on wastewater discharges and waste generation/disposal are still reported aggregated by company without proper links to installations or technological processes, and there are no plans to correct this situation.

3.3 Suggestions for the Scope of Integrated Permitting in Ukraine

Table 3 presents a comparison of the IPPC sector classification with the sectors regulated under the air protection regulations in Ukraine and those reporting to the Heavy Metals Emission Inventory (HMEI) in Ukraine. Those industrial sectors that have been added to the IPPC coverage in some EU countries *(e.g.*, the UK and Hungary) are also featured in the table.

Table 3 shows that almost all IPPC sectors are currently regulated in Ukraine under the air protection regulations, reporting either to SAER or HMEI. Therefore, it is possible to suggest that Ukraine can define the scope of the integrated permitting system in a similar way as in the EU, with additional activities (*e.g.*, mining, timber activities, storage or chemicals in bulk), as they were quoted as heavily polluting by several Ukrainian experts.

From among the sectors not covered by the current air protection regulations, it is possible to consider including municipal wastewater treatments plants (v*odokanals*) in the scope of integrated permitting in Ukraine as they are major water polluters. In the EU, wastewater treatment plants are considered as an end-of-pipe technique and not a production installation. Their environmental impact is primarily on water, making the medium-based approach feasible. However, it can be argued that several important aspects of wastewater plant operations, such as sludge treatment and accident prevention should be regulated in an integrated way. In cases where the same operator runs an industrial installation and directly connected to it industrial wastewater treatment facility, that facility must be treated as a part of the whole installation, and permit conditions should be set for wastewater treatment in an integrated permit.

Table 3. Comparison of the Scopes of Regulation in the EU and Ukraine

Ukraine SAER/NACE classification		HMEI/SNAP classification	IPPC categories		IPPC additions in EU countries
Electricity, gas, stem and hot water supply	section E, chapter 40	0101-03, 040201	1	Energy industry	Mining[5] of coal, uranium and metal ores, extraction of oil and natural gas
Mining and quarrying	section C	0104-05			
Production of metals	subsection DJ	0402-03, some 0301-03	2	Production and processing of metals	
Manufacturing of non-metallic mineral products	subsection DI	040610-19	3	Processing of minerals	
Manufacturing of chemicals, chemical products and man-made fibres	subsection DG	0404-05, 0603	4	Production of chemicals	Bulk storage of chemicals, tar and bitumen activities
Recycling	subsection DN, chap. 37	090401-03, 090201-08, 0907	5	Waste management	Production of fuel from waste
Manufacturing of pulp, paper and paper products	subsection DE, chapter 21	--	6.1	Production of pulp and paper	Timber activities
Manufacturing of textiles	subsection DB, chapter 17	--	6.2	Pre-treatment of fibres or textiles	
Manufacturing of leather and leather products	subsection DC	--	6.3	Tanning of hides/skins	
Manufacturing of food products and beverages	subsection DA, chap. 15	040605-08	6.4	Slaughterhouses, food production	
Agriculture, hunting and forestry	section A	--	6.5	Disposal of animal waste	
Fishery	section B		6.6	Pig and poultry farms	
--	--	0601-04	6.7	Use of solvents, surface treatment	
--	--	--	6.8	Production of carbon/graphite	
Transport, storage and communication	section I	--			

Without taking into account the size of installations, it is possible to estimate the number of Ukrainian facilities covered by NACE codes listed in Table 3. Based on the available data from SAER, there are 9,167 facilities[6] that fall under the IPPC categories.

The next step should be the introduction of threshold values to focus the integrated permitting regime on big polluters and not overburden SMEs. The thresholds defined in Annex I of the IPPC Directive are widely used across EU countries. In some of them the values are set even lower (*e.g.*, for farms in the Netherlands). For this case study's preliminary recommendations on the scope it was appropriate to take the EU thresholds as a basis for setting limits of application of integrated permitting requirements. Adjustments and simplifications may be made in the future, based on the EU and Ukrainian experience.

Table 4 presents a proposal for the scope of the integrated permitting system in Ukraine. It shows the preliminary allocation of Ukrainian installations[7] in individual categories of economic activity.

[5] Mining is not yet covered by the IPPC Directive but is expected to be added in the near future.

[6] This figure is derived from Annex 1 (8.675) with the addition of landfills (492).

[7] The term 'installation' here refers to the whole site operated by one operator.

Table 4. Proposed Scope for the Integrated Permitting System in Ukraine[8]

IPPC code-Sectors		Operation	Threshold	NACE code	Number of Ukrainian facilities
1. Energy	1.1	Combustion installations	Rated thermal input 50 MW or more	11-40	66
	1.2	Refineries		23, 15, 41	33
	1.3	Coke ovens		27	16
	1.4	Installations for gasification and liquefaction		24, 40	9
2. Production and processing of metals	2.1	Metal ore roasting or sintering installations (including sulphide ore)		27	11
	2.2	Production of pig iron or steel (primary and secondary fusion), including continuous casting	Capacity exceeding 2.5 t/hour	27	16
	2.3 a)	Ferrous metallurgy: hot-rolling mills	Capacity exceeding 20 t/hour of crude steel	27, 28	17
	2.3 b)	Ferrous metallurgy: operating hammers in a forge	Energy over 50 kJ/hammer, calorific power used over 20 MW		70
	2.3 c)	Ferrous metallurgy: application of protective fused metal coats	Input exceeding 2 t/hr of crude steel		17
	2.4	Ferrous metal foundries	Production capacity exceeding 20 t/day	27	52
	2.5 a)	Production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes	Melting capacity exceeding 4 t/day for lead and cadmium or 20 t/day for all other metals	27	67
	2.5 b)	Smelting, including alloyage of non-ferrous metals and recovered products (refining, foundry casting, etc.)	Melting capacity exceeding 4 t/day for lead and cadmium or 20 t/day for all other metals		70
	2.6	Surface treatment of metals and plastic materials using electrolytic or chemical processes	Volume of treatment vats exceeding 30 m^3	28	152
3. Processing of minerals	3.1	Production of cement clinker in rotary kilns Lime production in rotary kilns or in other furnaces	Production capacity over 500 t/day Production capacity over 50 t/day	26	15
	3.2	Production of asbestos and asbestos-based products		26	5
	3.3	Glass manufacturing	Melting capacity exceeding 20 t/day	26	39
	3.4	Melting of mineral substances including mineral fibres production	Melting capacity exceeding 20 t/day	26	15
	3.5	Manufacturing of ceramic products by firing	Production capacity exceeding 75 t/day	26	40
4. Production of chemicals	4.1	Production of organic chemicals		24	140
	4.2	Production of inorganic chemicals		24	140
	4.3	Production of phosphorus-, nitrogen- and potassium-based fertilizers		24	12
	4.4	Production of basic plant health products and biocides		24	2
	4.5	Production of pharmaceuticals using chemical or biological processes		24	32
	4.6	Productions of explosives		24	14
5. Waste Management	5.1	Disposal or recovery of hazardous waste	Capacity exceeding 10 t/day	90	7
	5.2	Incineration of municipal waste	Capacity exceeding 3 t/hour	90	3
	5.3	Disposal of non-hazardous *inert* waste	Capacity exceeding 50 t/day	90	483
	5.4	Landfills containing other than inert waste	Receiving more than 10 t/day or with a total capacity exceeding 25000 t	90	9

[8] Shaded are specifications or categories that differ from the ones defined in Annex I of the IPPC Directive.

IPPC code-Sectors		Operation	Threshold	NACE code	Number of Ukrainian facilities
6. Other	6.1	Pulp & paper production	Production capacity over 20 t/day	21	13
	6.2	Pre-treatment or dyeing of fibres or textiles	Treatment capacity over 10 t/day	17	10
	6.3	Tanning of hides and skins	Treatment capacity exceeding 12 t of finished products per day	19	12
	6.4 a)	Slaughterhouses	Carcass production capacity over 50 t/day	15	35
	6.4 b, c)	Treatment and processing for food production	Average annual production capacity over 150 t/day[9]	15	25
	6.5	Disposal/recycling of animal waste	Treatment capacity over 10 t/day	15	25
	6.6	Intensive rearing of poultry or pigs	40 000 places for poultry	01.2	70
			2000 places for pigs (over 30 kg)		70
			750 places for sows		50
	6.7	Surface treatment of substances, objects or products using organic solvents	Consumption capacity of solvents over 150 kg/hour or over 200 t/year	17-22; 24-36	140
	6.8	Carbon (hard-burnt coal) or electro-graphite production		24	5
	6.9	Distilling or heating of tar or bitumen in connection with any manufacturing process	Use of over 5 t/year of tar/bitumen		500
	6.10	Tyre production			2
7. Mining	7.1	Coal mining	Production over 100 000 t/year; open-cast mining with the site surface over 25 ha		200
	7.2	Extraction of oil and natural gas	Extraction over 500 t/day of oil and 500 000 m3/day of gas		24
	7.3	Uranium ore mining	Extraction over 100 000 t/year		1
	7.4	Metal ore mining	Extraction over 1 million t/year of iron ore; 100 000 t/year of non-ferrous metals; open-cast mining with the site surface over 25 ha		9
Total		**All categories**			**2,743**

The number of installations presented in Table 4 should be regarded as a first detailed estimate. For example, based on the EU experience, the number of intensive farms and food production installations seems small in proportion to the size of population in Ukraine. Thus, the total number of installations covered by integrated permitting is likely to be over 3,000.

To define the final scope of the integrated permitting system, it will be necessary for the MEP to:

- Discuss and agree on the definition of installation (as different from enterprise, plant, or emission source).

- Discuss and clarify the proposed specification of categories and thresholds with stakeholder government authorities, industry representatives from relevant sectors and non-government experts to adjust the activity definitions and threshold values in order to prevent ambiguous interpretations.

[9] The IPPC Directives defines the thresholds for the food industry as 75 t/day for meat products, 300 t/day for vegetable products, and 200 t/day for dairy products. However, because Ukraine aggregates all food production into one category, a threshold of 150 t/day is proposed.

- Make an inventory of facilities based on all available databases and verify the capacities case by case (a possible approach would be to contact operators through regional environmental authorities, environmental inspectorates or the Ministry of Industrial Policy).

4. ESTABLISHING A LEGAL BASIS FOR INTEGRATED PERMITTING

The framework Law on Environmental Protection was adopted in 1991 before the demise of the Soviet Union. In particular, it provides for issuance of permits for emission of pollutants into air, wastewater discharge into water bodies, and placement of waste. As a follow-up, the Air Protection Law (1992, new version dated 2001), the Water Code (1995), and Law on Waste (1998) were subsequently enacted to create regulatory frameworks for each of those areas.

Enterprises as legal entities rather than installations are subjects of regulation in Ukraine, making it impossible to either obtain reliable information on main production processes or to use effective regulatory mechanisms. The focus is still on "end-of-pipe" emission/effluent treatment measures rather than on the analysis of the production process as such and pollution prevention through improvements of production techniques. The cross-media approach to assessing environmental impacts of installations is not utilised, factors such as soil contamination, noise, odour, vibration, electromagnetic radiation, and other important environmental aspects are not considered.

Thus, Ukraine's regulatory framework requires considerable reform in order to introduce integrated pollution prevention and control and integrated permitting. The reform should include both adjustment of the current environmental medium-specific legislation and adoption of a new law which would cover key elements of integrated permitting.

4.1 Air Protection

Regulatory requirements for air emissions are set primarily in the Air Protection Law of Ukraine (1992; second version dated 2001). Permits for emission of pollutants into ambient air from stationary sources are issued by territorial branches of the MEP for up to five years. Emission limit values, which are also set for up to five years and are approved by the MEP and the Ministry of Health and endorsed upon by local executive and self-governance authorities, serve as grounds for permitting.

Attempts were made in recent years, especially in air protection, to amend the legislation in order to introduce the technique-based approach to environmental regulation and to improve other regulatory instruments.

In particular, under Decree of the Cabinet of Ministers of Ukraine (CMU) No. 1655 of 13.12.2001 "On Approval of the Procedure for State Registration in Air Protection" and the respective instruction (MEP Order No. 177 of 10.05.2002), enterprises whose potential emissions exceed thresholds for individual substances are subject to registration (and permitting). However, since the thresholds were set at a very low level, the number of enterprises subject to permitting did not go down considerably.

A good basis for harmonisation of the Ukrainian legislation with the international practice is created by CMU Decree No. 1780 of 28.12.2001 "On Approval of the Procedure for Development and Approval of Pollutant Emission Limit Values for Stationary Sources" based on the new 2001 version of the Air Protection Law, which, among others, governs the design and application of technology-based emission standards for existing and new installations. MEP Order No. 66 of 14.02.2002 "On the Development and

Approval of Pollution Emission Limit for Stationary Sources" provides for the creation of a registry of best available techniques, but the funding for this purpose has never been allocated.

MEP Order No. 317 of 16.08.2004 "On Approval of the List of the Types of Equipment Subject to Pollutant Emission Limit Values for Stationary Sources" for the first time classifies installations within industries, which makes it possible to change the regulatory approach in principle. The list was prepared based on similar existing European lists.

A number of similar documents drafted concurrently also govern impacts of economic activities and physical and biological factors of stationary pollution sources atmospheric conditions.

CMU Decree No. 302 of 13.03.2002 "On Approval of the Procedure for Implementation and Funding for Issuance of Permits for Pollution Emissions into Ambient Air from Stationary Sources and Registration of Enterprises, Institutions, Organisations, and Individual Entrepreneurs Subject to Such Permits" lays out the underlying principles of the new regulatory framework and repeals the emission permitting regulation of 1995. However, the drafting and coordination of new instructions with other ministries and agencies took much longer than expected, and their approval was put off until 2005.

4.2 Water Protection

The permitting of "special water use" is governed mostly by two key pieces of legislation: the Water Code of Ukraine (most recent version dated 07.12.2000), which has the status of a law, and Decree of the Cabinet of Ministers of Ukraine No. 459 of 10.08.1992 "On the Procedure for Permitting of Special Use of Natural Resources and Setting Limits for the Use of Resources of National Importance" (as subsequently amended).

The current legislation does not clearly define a permitting authority; therefore, the procedure may vary by region. The permanently acute problem of interagency coordination in water issues is aggravated by the need to distribute powers not only between entities of the MEP and the Ministry of Health (which is the case for air emission permitting), but also among the State Water Committee, water supply and sanitation utilities ("vodokanals"), and large industries that have their own treatment plants and act as vodokanals. The permitting process at the regional level also involves the Ministry of Emergency Situations and the State Committee for Housing Services; and if an enterprise abstracts water industry from an underground source, relevant bodies of the State Geology Committee also get involved.

An application for a special water use permit filed by industries includes a rationale for the water use and discharge volumes. Contrary to the international practice, Ukrainian environmental authorities do not regulate industries' discharges into centralised sewerage systems. Control in this event is exercised by the entity which receives the wastewater for treatment. Nor is there regulation of wastewater discharges onto the ground (ravines, lowlands, open pits, etc.) – it is banned by Article 70 of the Water Code. Article 44 of the Water Code on responsibilities of water users requires them, among others, to collect and treat storm water runoff.

Another major shortcoming of the approach adopted in Ukraine is that ELVs are very stringent and have little to do with the real state of the water bodies or industries' capabilities. Therefore, temporary ELVs (temporarily agreed emissions) are often issued as permits, although current legislation does not provide for this. Attempts were made in Ukraine to render ELV setting more realistic, but so far in vain.

The ecological classification of water bodies in Ukraine is also inconsistent with the European one, adopted in the EU Water Framework Directive. Changing the classification and introducing basin-based

water resources management are among the most pressing tasks of the water protection legislation reform in Ukraine, primarily in drafting a new version of the Water Code.

4.3 Waste Management

Waste placement permits are issued under Decree of the Cabinet of Ministers No. 440 of 1995 "On the Procedure for Permitting of Generation, Storage, Transportation, Use, Disposal, Destruction, and Recovery of Hazardous Substances, Including Biotechnology Products and Other Biological Agents" (as amended in 1998, 2002, and 2004). Based on the Law on Waste (1998), a whole range of decrees of the Cabinet of Ministers and agency documents have been drafted, and the legal framework in this area keeps developing rapidly.

The current legal framework uses the concepts of the maximum allowed and excess volume of waste generation subject to special permitting by regional divisions of the MEP. The regulation includes the use of waste generation limits in technological processes, unit values for waste generation, use and waste of raw materials in technological processes, and other standards. Such focus on the regulation of technological processes creates premises for broad application of best available techniques as an element of the integrated permitting system.

4.4 Development of a Law on Integrated Pollution Prevention and Control

The regulation of emissions into ambient air, water use, wastewater discharges, and placement of waste in Ukraine is currently within the competence of the MEP. At the same time, other environmental aspects to be considered in integrated permits are either regulated by other authorities or are not regulated at all. The issues of soil contamination and noise impact of industrial facilities are currently within the competence of the Ministry of Health, and the legal framework in these areas is extremely weak. Energy efficiency issues are within the competence of the State Committee for Energy Conservation; and prevention of accidents and emergencies is under the State Committee for Labour Protection. Construction standards for new installations are largely determined by Gosstroy (the State Construction Committee).

Ukraine does not yet have rules or technical guidelines for decommissioning of installations; there are no decontamination procedures for closed industrial sites. Current standards for handling hazardous substances are not supported by land reclamation requirements: there is neither necessary experience nor guidance. Environmental impact assessment requirements and soil and groundwater quality standards are not consolidated in guidelines for decommissioning.

The need to apply technological standards and best available techniques in regulating the mentioned environmental aspects is noted in a number of most recent documents drafted by the MEP, but major additional further efforts are required to ensure practical implementation of the integrated approach.

Various legal arrangements could be used to introduce integrated permitting, in particular, all necessary amendments could be introduced to the framework Law on Environmental Protection and the medium-specific legislation. However, the experience of the Czech Republic, in particular, and that of other countries has shown that adoption of a ***special Law on Integrated Pollution Prevention and Control*** (IPPC) would be more appropriate.

A special IPPC Law would make it possible to stipulate key provisions of the new system in a concise manner, create necessary conditions for interagency coordination, and ensure development of new elements of the regulatory framework (use of the BAT concept in setting integrated permit conditions, development of a single list of pollutants for all environmental media, etc.). The adoption of an IPPC law

would also accelerate solving a number of common environmental management issues, in particular, the formulation of uniform terms used in the environmental regulation of economic activities.

Annex 2 comprises a table of detailed recommendations for bringing the current Ukrainian regulations in line with the integrated permitting system, which should be done concurrently with the adoption of an IPPC law.

5. INSTITUTIONAL FRAMEWORK FOR INTEGRATED PERMITTING

This section aims to provide recommendations on the design of an institutional structure in Ukraine that would be put in place to administer the integrated permitting system. In order to establish an appropriate institutional framework, it is necessary to set up an institutional structure that would enable the necessary functions and competencies within the new system and allocate human, technical, and financial resources to support it.

There are five main functions/competencies related to the integrated permitting system:

- National-level development and implementation of the integrated permitting system;
- Issuance of integrated permits;
- Inspection of compliance with permits;
- Handling appeals against permitting decisions; and
- Expert and informational support for integrated permitting.

The following subsections discuss options for allocating these functions to relevant authorities considering the division of competencies, resource allocation, suitable organisational structure, and linkages with other stakeholders.

5.1 National-Level Functions

The Ministry of Environmental Protection should play a leading role in preparing the introduction of the integrated permitting system in Ukraine. It should work closely with the Ministry of Industrial Policy, Ministry of Fuel and Energy, Ministry of Health, State Committee for Energy Conservation, the State Environmental Inspectorate, other government agencies, industry associations, and other stakeholders under the framework of the Integrated Permitting Working Group (IPWG). The main activities over the period of transition to integrated permitting will include:

- Development of an **implementation strategy** with concrete actions which will have to be accepted not only by MEP management, but also by other stakeholders, and receive approval by the Cabinet of Ministers. Such a strategy can be prepared within the MEP, if resources are available, or by consultants and should be critically examined by the IPWG.
- Preparation of relevant **draft legislation** for the implementation of the integrated permitting system and its submission to the Cabinet of Ministers.
- Development of integrated permitting **procedures, forms, and guidance documents** for the permitting authorities and industry.

In order to perform these tasks, a permanent Integrated Permitting Department (IPD) should be established within the MEP, initially with a minimum of 4 staff persons. The IPD staff competencies need to cover both environmental and management skills. The MEP management needs to enable and promote necessary cooperation between the IPD and other relevant ministry departments (air protection, water protection, waste management and soil protection, nature protection, environmental assessment, policy/planning, economics, etc.). Progressively, the IPD should be strengthened and expanded (to 7-10 people) to be able to provide continuous guidance to the permitting authorities, possibly handle permitting in cases of trans-boundary impact, consider appeals against permitting decisions made at the regional (oblast) level, carry out periodic regulatory review of the integrated permitting system and take required corrective actions.

5.2 Permitting Function

A designated permitting authority will be responsible for permitting of new and existing installations that are covered by the integrated permitting regime (it may or may not be also responsible for regulating SMEs that do no require integrated permits), permit review and revisions, review of reporting of reporting from the regulated installations and other communication with the regulated community.

Currently in Ukraine, regional offices of the Ministry of Environment (ROMEPs) issue separate permits for air emissions, wastewater discharges, and waste storage and disposal. The size of the country and the large number of installations that would be subject to integrated permitting requirements make the regional level most appropriate for issuing integrated permits. An exception may be made for permitting installations with existing or anticipated trans-boundary environmental impacts, which may be done at the national level. The ROMEPs have accumulated significant experience with air, water and waste permitting and have relatively good knowledge of the regulated community, so designating them as integrated permitting authorities is also likely to be the least costly and most politically acceptable option (as opposed to creating a separate environmental executive agency). The MEP will provide countrywide coordination and supervision of the implementation of the integrated permitting system. The ROMEPs will require substantial capacity building in technique-based permitting, including determination of BAT, combined approach to setting ELVs, efficient use of energy, water, and other resources, accident prevention, etc.

The ROMEPs will have to ensure coordination with other government agencies that presently have competence over some environmental aspects that will be incorporated into integrated permits:

- Regional office of the Ministry of Health with respect to air and water pollution, as well as noise regulation;
- Local authorities in designing and controlling the implementation of improvement programmes prescribed in integrated permits;
- River basin management authorities with respect to water abstraction;
- The Ministry of Emergencies in setting permit conditions for accident prevention and response;
- The State Committee for Energy Conservation with respect to energy use and efficiency, etc.

The number of fully dedicated staff required in each ROMEP to carry out the permitting functions will be 1-2 persons per regional office during the preparation phase of the transition to integrated permitting, and 3-5 permitting officials once the system has been implemented. The latter figure will vary depending on the number of integrated permitting installations in the region. Currently, in all Ukraine's 27

regions there are about 130 permitting officers responsible for permitting about 15,000 facilities[10]. Of these permitting officers, 41% are responsible for issuing air emission, 37% for wastewater permits, and 22% for waste regulation. On average, one permitting officer in Ukraine handles 115 facilities. Most of these facilities, however, are small and medium-sized and, under the new system, would follow a much simpler permitting procedure. The extension of the permit validity to 5-7 years would also help alleviate the administrative burden and free up human resources for working on the transition to integrated permitting.

5.3 Inspection Function

As an indispensable part of the integrated permitting system, the inspection function covers not only actual *integrated* inspection of relevant installations, but also continuous information exchange with the permitting authorities in setting and verifying compliance with permit conditions for monitoring, recordkeeping, and reporting; approving and monitoring the implementation of an improvement programme; and managing emergency situations.

The verification of compliance with all environment-related permits is currently the responsibility of the State Environmental Inspectorate. While it would be reasonable to maintain this institutional setup, it will be necessary to change the inspection procedures to ensure cross-media inspections that would consider all relevant operational and management techniques at an installation and not just compliance with ELVs, as is currently the case. Furthermore, inspectors would have to be well informed on applicable BATs and comment on integrated permit applications and respective permit conditions (to make the latter more realistic and enforceable). In addition, deeper reviews of reports from regulated installations would be necessary in order to prioritise the inspection work and focus on 'bad' performers. Further guidance on improving the performance of environmental inspectorates can be found in *"Assuring Environmental Compliance: A Toolkit for Building Better Environmental Inspectorates in Eastern Europe, Caucasus, and Central Asia"* (OECD, 2004).

5.4 Appeal Function

Presently in Ukraine, environmental permits are rarely appealed because the procedure is lengthy, and operators accept permit conditions knowing that their enforcement would likely be lax and a deal can be negotiated with environmental authorities in case on non-compliance.

Under the integrated permitting system, any person or body, including the applicant for a permit, stakeholder authorities, NGOs, and representatives of the public, can make an appeal against a refusal to grant a permit or against certain conditions in the permit that has been granted. The appeal procedure should be laid out in implementing regulations to the law on integrated permitting.

It is suggested that since ROMEPs would issue (most) integrated permits, the central office of the *MEP should be the appellate authority of the first instance*. The IPD would handle the appeals process. If the operator or any other party is dissatisfied with the Ministry's decision on the appeal, it may file a suit against the MEP in an *arbitration court*, subject to a pertinent legal procedure. It is reasonable to expect a fair number of appeals at least at the initial stage of implementation of the integrated permitting system.

[10] By contrast, one environmental permitting officer at a regional authority in the Czech Republic is responsible, on average, for 25 facilities with 40 installations. According to recommendations made by German experts in a technical assistance project on IPPC implementation in the Czech Republic (Phare, 2002), there should be three permitting officers and one support staff for 100 installations.

5.5 Expert and Information Support Function

The Ministry of Environment Protection will need expert and information support in the following major functions of the integrated permitting system:

- Development and maintenance of **technical guidance** on sectoral and horizontal BAT (and a related national **BAT database**). This would most likely involve translating the EU BREFs and other relevant international guidance documents and adjusting them based on the Ukraine practice.

- Providing **information support** to the permitting authorities, inspectorates, industry, and the general public on BAT and other aspects of integrated permitting. Such information support may involve establishing a special website on integrated permitting and creation of interagency electronic networks.

- Providing **training** on procedural and technical aspects of BAT for both government officials and industrial managers. Many training materials on institutional strengthening related to IPPC implementation are already available from recent EU technical assistance projects in all new EU Member States[11].

Based on international experience, it is advisable to have a core group of about 30 experts to provide these services. About 80% of the group would focus on BAT for individual sectors and cross-sectoral guidance on issues like self-monitoring, energy efficiency, cost-benefit analysis, and site assessment. The remaining experts should be engaged in IT development, communication, management, and training. English language skills would be an important requirement for most of the experts.

There are several options for institutions that can handle some or all of these tasks:

- **Existing research institute** the MEP already works with. This may be the cheapest option, if the institute is able to reorganise its functions accordingly with an only small increase of staff. The institute would also have high credibility with the MEP because of the long-term working relationship and experience. However, the drawbacks of this option are the likely sectoral orientation of such an organisation (hence, its lack of cross-media perspective), its conservatism with respect to the existing permitting system, and low salaries of experts (which hampers motivation).

- **Internal MEP support team**. Such a team can pull together experienced people from both the central and regional offices of the MEP, as well as a few individual outside advisers, under coordination of the central IPD. However, the absence of fully dedicated staff would lower the efficiency of the support team. In addition, it may be difficult to create a balance between ministry staff with experience in single-media permitting, industrial process engineers needed to develop and maintain BAT guidance, and other experts (*e.g.*, in information technology, communication, etc.).

- **External consultants**. Using external (including foreign) consultants offers flexibility in responding to ad-hoc tasks by hiring appropriate experts but does not contribute to building long-term institutional capacity. It is also an expensive option.

[11] An example of an EU-funded IPPC support project is the "Reinforcement of IPPC Implementation in the Czech Republic" (CZ02/IB/EN/03) which included pilot permitting and training. More information is available at http://sharepoint.infomil.nl/eu/czech/IPPC.

- **National IPPC Centre** on the basis of an existing cleaner production centre. The staff of a cleaner production centre (or its equivalent) will have already had exposure to the concept and technical options of integrated environmental management in industry. It is also likely that such a centre would have the computer equipment and language skills necessary to develop BAT guidance documents. An IPPC Centre would be able to provide continuity of service to both government and industry. The disadvantages of this option are its relatively high cost (still, much lower than that of consultancy services) and the present distrust between ministry officials and nongovernmental organisations.

Although either of these options would be acceptable (provided the MEP demonstrates strong leadership in the preparation of the integrated permitting system), the latter option is recommended as the most effective one in terms of the likely ratio between the quality and cost of the required services.

The MEP should be responsible for financing specific expert and information support activities related to integrated permitting. Other operations of the IPPC Centre could be funded by proceeds from commercial activities and services offered by the centre.

6. TIMING OF IMPLEMENTATION

The introduction of integrated environmental permitting in Ukraine can take place only with sufficient political support of the Ukrainian government. Such support is necessary in the preparatory phase of the transition to initiate necessary institutional changes and communication with industry, as well as to strengthen cooperation between relevant government stakeholders. The preparatory phase has to be long enough to secure the necessary funding for administering the system and to negotiate with industry and sectoral ministries responsible for industry, energy sector, and agriculture an acceptable timeframe for the implementation of integrated permit requirements.

This Section contains suggestions for tasks and their timing during the preparatory phase as well as the approach for a gradual introduction of integrated permitting requirements for industry.

6.1 Preparatory Stage Timing

Table 5 summarises the steps Ukraine will need to take to prepare the institutional, legal and technical basis for the transition to integrated permitting. Special attention needs to be given to long-term activities, such as preparation of technical guidance and carrying out pilot permitting projects, since they are closely linked to the introduction of integrated permitting requirements for individual industrial sectors. The transition is expected to take between 10 and 15 years.

Since 2002, the Ukrainian government has already carried out several analytical projects and activities to support the introduction of integrated permitting (these activities are marked with light shading in Table 5). An interagency Integrated Permitting Working Group was set up in the early 2003 under the leadership of the Ministry of Environmental Protection. Technical assistance projects carried out in 2002-2003 with support from the EU/Tacis and the World Bank have compared in detail the Ukrainian and EU permitting legislation and performed a preliminary gap analysis. The World Bank project laid the groundwork for pilot permitting initiatives in three industrial sectors (a thermal power plant, a car batter production facility, and a coke plant). The current project is making further steps forward in making recommendations regarding the scope and institutional framework of the integrated permitting system (the ongoing activities marked with darker shading in Table 5).

However, the government still has not expressed a formal high-level commitment to introduce integrated environmental permitting for large industry in Ukraine. This political decision is essential to mobilise not only all relevant staff at the MEP (at both the national and regional levels) but also other concerned government authorities for the active preparation and implementation of the new system. Since the introduction of integrated permitting requires many changes across various authorities, it is important for their staff to understand potential benefits of the new system as they prepare for the transition.

Table 5. Indicative Steps and Timetable for Introducing Integrated Permitting in Ukraine

Year	Task	Responsible bodies	Cooperation with Other Stakeholders
1	Make a political decision to introduce integrated environmental permitting based on the policy paper	Cabinet of Ministers	
	Establish Integrated Permitting Working Group (IPWG)	MEP, MIP, MAP, MFE	MH, MF, other relevant government agencies
	Determine scope of the integrated permitting system (industrial sectors and thresholds)	IPWG, MEP	Other stakeholders (including industry) to comment on the scope
	Analyse the legal, institutional and information requirements of the new system, conduct a needs assessment (human, technical, financial resources)	IPWG, MEP	Stakeholder consultations
	Develop an overall strategy for the transition and implementation plan	MEP	IPWG, Stakeholder consultations
	Discuss and determine approach for developing a national BAT guidance; start collecting existing material on BAT	MEP	MIP, MAP, representatives of industrials associations, research institutes
	Start drafting necessary primary legislation	MEP	Stakeholder consultations on the draft
2	Implement institutional arrangements	MEP, PA	
	Prioritise sectors for gradual introduction of integrated permitting and finalise transition plan for industry	IPWG, MEP	Other relevant agencies, industry representatives to comment on the priorities; industry starts planning
	Start developing/adjusting BAT guidance for prioritised industry sectors	IPWG, IPPC Centre	Cooperation with industry representatives, relevant institutes
	Draft law on integrated permitting, amendments to existing legislation published for consultation	MEP	Stakeholder consultations on draft legislation
	Start drafting secondary legislation	MEP	Stakeholder consultations on draft legislation
	Pilot permitting projects	MEP, PA	Industry, NGOs
	Training commences	MEP, PA	IPPC Centre, other relevant authorities
3	Law on integrated permitting promulgated	MEP/Supreme Council	
	Draft implementing regulations published, then adopted	MEP/Cabinet of Ministers	Stakeholder consultations on draft legislation
	Continue work on BAT technical guidance, first BAT technical guidance finalised	IPPC Centre, MEP	MEP, IPWG, industry, relevant institutes
	Preparation of procedural guidance documents	MEP	Stakeholder consultations on draft
	Training and pilot projects continue	MEP, PA	IPPC Centre, other relevant authorities, industry, NGOs
	Preparation of national permit database	MEP, PA	
4	Continue preparation of other BAT guidance	IPPC Centre	MEP, IPWG, industry representatives, relevant institutes
	Procedural guidance documents published	MEP	
	Permit registers and national permit database established	MEP, PA	
	Training and pilot projects continue	MEP, PA	IPPC Centre, other relevant authorities, industry, NGOs
5	Requirements for new installations to obtain permit prior operation come into force	PA	Industry
6 - 15	Finalisation of BAT guidance	IPPC Centre	MEP, IPWG, industry representatives, relevant institutes
	Gradual introduction of integrated permits for existing installations	PA	Industry

6.2. Industry Phase-in Schedule

6.2.1 Sector Prioritisation

In order to accommodate the capacity constraints related to the transition to the integrated permitting regime (the need to develop sectoral technical guidelines, lack of practical experience in the permitting authorities, large administrative burden of moving to the new system), industrial sectors have to be prioritised to face the new requirements at different times.

In this case study, the consultants slightly modified the prioritisation criteria specified in Chapter VI of the Permitting Guidelines. To estimate the environmental impact, the criterion was subdivided into assessments of impacts on air, water, and soil, the scores for which were then averaged. One criterion – the potential for improvement of environmental performance – was added to reflect the availability of effective pollution prevention and control techniques in a particular sector. The criterion on foreign direct investment was subsumed in the financial performance criterion. In addition, the weighting factors were modified so that environmental impact was accorded the biggest importance.

Table 6. Criteria for Prioritisation of Industrial Sectors

Criteria	Score			Weighting
	1	**2**	**3**	
Environmental impact	L	M	H	4
Potential for improvement of environmental performance	L	M	H	2
Anticipated compliance costs	H	M	L	3
Financial performance	L	M	H	2
Export orientation	L	M	H	1
Number of installations to be regulated	H	M	L	1

L = Low, M= Medium, H= high

At this stage, a detailed assessment of all concerned sectors according to the prioritisation criteria could not be performed in Ukraine due to the lack of data. The evaluation of environmental impact was based on the data from the State Statistical Committee. The other scores were estimated based on the opinions of Ukrainian experts and government representatives and on the experience from EU countries. The summary of the prioritisation results and the proposed timeframes for the introduction of integrated permitting are presented in Table 7 (see Annex 3 for all individual scores).

Table 7. Prioritisation of sectors for transitory phase-in schedule

Sectors	IPPC codes (cf. Table 4)	Total environmental impact	Number of installations	Overall score	Proposed time of application for integrated permits
Fuel and energy industry	1.1-1.4, 6.8	2.4	132	4.43	year 5
Pulp and paper industry	6.1-6.3	1.6	35	4.23	year 5
Surface treatment by electrolytic or chemical processes	2.6	2.0	152	4.17	year 7
Waste management	5.1-5.4	1.4	502	4.12	year 7
Mining industry	7.1-7.4	2.4	234	4.10	year 8
Production and processing of metals	2.1-2.5	2.4	320	3.93	year 8
Chemical industry	4.1-4.6, 6.9-6.10	2.0	840	3.83	year 10
Processing of minerals	3.1-3.4	1.2	114	3.80	year 10
Food production	6.4-6.5	1.6	85	3.57	year 12
Surface treatment by organic solvents	6.7	1.4	140	3.27	year 12
Intensive poultry or pig farming	6.6	1.2	190	2.97	year 12

The resultant time sequence of sectors to become subject to integrated permitting requirements shows that the sectors with a high environmental impact are in the first half of the table, sectors with large number of installations are in the middle, and sectors with the low overall environmental impact are at the end of the table. The presented sequence of sectors makes it possible to start with heavily polluting energy sectors as well as with relatively small and not the most polluting sectors (paper sector). The food and agricultural sectors are at the end of the priority list. This should allow farming and food companies to prepare well for more robust regulations than in the current system and for the introduction of BAT.

It is important to understand that the proposed scoring procedure is only one approach to sector prioritisation. To a large extent, the scoring depends on the subjective evaluation of selected criteria. Therefore, it is advisable to verify the prioritisation results against more objective information and have a

larger stakeholder consensus on them. Ultimately, however, the sectoral prioritisation for the introduction of integrated permitting is a political decision that cannot be entirely objective.

In order to adequate plan capacity building efforts for the regional permitting authorities (ROMEPs), it is necessary to take into account the industrial sector distribution across the Ukrainian regions and compare it with the institutional capacity of the respective ROMEPs to handle the transition from the current permitting practice to the integrated system. From the currently available data it is possible to estimate that about half of all key sectors are relatively well distributed across the regions (e.g., there is at least one large combustion plant in each region for a total of 66 in the country). Detailed data on regional distribution of sectors selected under integrated permitting are expected to be available in the spring of 2005, based on the new reporting requirements.

6.2.2 Transition of New and Existing Installations

New installations and those undergoing a change in operations must obtain integrated permits by the deadlines set for different sectors on the basis of the prioritisation. For this to be feasible, all the preparatory steps listed in Table 5, covering the legal, technical and institutional aspects of the permitting system, will have to be completed at least half a year prior to the deadline for each specific sector. In particular, the BAT guidance for the sector must be approved before that sector enters the new system.

Existing installations will have to comply with the requirements within a few years thereafter but **no later than 15 years** after a political decision is made to implement integrated permitting. To make the transition for existing installations smoother, a regional negotiation approach may be used to better manage the transition of existing installations in a particular sector within the period between the deadline for new installations for that sector and the overall deadline for the transition (15 years). Under a regional transition scheme, the ROMEP would negotiate with individual installations subject to integrated permitting requirements the date by which that installation would be required to submit an application for an integrated permit. Such negotiation should take place when the operator applies for a modification or renewal of its medium-specific permits and be based on an environmental audit of the installation conducted by the operator. The audit would characterise the installation's technical and financial potential to introduce BAT. By no means should the negotiated application date (written as a condition into the installation's current permit) go beyond the overall national deadline for the transition to integrated permitting.

The drawback of the regional approach to the transition for existing installations is that it may be hampered by pressure exerted by operators to push back the compliance deadline as much as possible, thus leading to corruption. As an alternative to the regional negotiation approach, an additional national deadline could be set for existing installations to obtain integrated permits (for example, 3 years after the deadline for new installations in the same sector).

6.2.3 Pilot Permitting

The experience of new EU Member States has shown that pilot projects are the most practical method of capacity building not only for industry but also for permitting and other stakeholder authorities involved in the permitting procedure, as well as NGOs.

The maximum benefit from pilot projects in Ukraine can be obtained if they are carried out in all sectors to be regulated under the integrated permitting regime and across all regions. This may not be practically possible, as there are over 40 subcategories of activities to be covered by integrated permitting (as listed in Table 4). As can be seen in Table 5, pilot projects are suggested to be carried out in the years 2-4 of the preparation to the transition. About 10 pilot projects per year over three years covering the main

categories of regulated installations and carried out in the regions where those categories are most present would help to get practical experience while testing the integrated permitting procedure, application and permit forms, and BAT guidance.

The pilot projects schedule would be good to link to the work plan for the preparation of sectoral technical guidance (which itself would be a function of the sector prioritisation), ensuring that a finished or at least draft version of a guidance document can be put to a practical test. Useful technical support can be obtained by utilising available case studies and pilot projects from new EU Member States and/or from assistance by "old" EU countries[12].

[12] The Swedish government is currently considering providing such technical assistance to Ukraine, starting in the early 2005.

7. CONCLUSIONS

The present case study shows that designing an integrated permitting system for Ukraine should be based on determining the scope of regulated activities/sectors. The preliminary research has revealed that about 2,700 Ukrainian facilities would fall under the integrated permitting regime. This number accounts for about 15 % of all plants currently regulated under the air pollution regime. Compared to the scope of application of the IPPC Directive, the suggested scope of integrated permitting for Ukraine has been broadened by including the mining industry due to its high polluting potential, as well as by adding a few smaller sub-sectors (see Table 4 in Section 3.3).

The institutional structure necessary for administering an integrated permitting system will require the creation of an Integrated Permitting Department at the MEP, strengthening the regional MEP offices that will be responsible for issuing integrated permits, and establishing a technical expert support body (*e.g.,* a national IPPC centre).

Implementing integrated permitting in Ukraine will require strengthened stakeholder cooperation on two main levels. First, during the preparatory stage, inter-ministerial cooperation will be necessary to agree on the degree of integration of the currently separate environment-related permits/approvals, on the scope of regulated sectors and on the timing of integrated permitting introduction. Second, during the implementation stage, regional permitting authorities (ROMEPs) and relevant concerned authorities will have to collaborate among themselves and with the public in setting conditions in integrated permits.

The preparatory phase should take a maximum of 5 years from the political decision enabling the implementation of integrated permitting. The phase-in of integrated permitting requirements for industry is projected to last an additional 10 years.

The MEP should continue to provide leadership in the effort to introduce the integrated environmental permitting system, but a higher, government-level decision is urgently needed to provide a strong political backing to the reform process. Once such definitive political decision has been made, the MEP should proceed to develop and adopt an overall strategy for the transition and an implementation plan and begin to draft the necessary legislation and procedural and technical guidance, supported by pilot permitting projects.

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ANNEX 1. SECTORAL DISTRIBUTION OF AIR EMISSION SOURCES

NACE code	Description	Number of plants with air emissions in 2003
Section A	***Agriculture, hunting and forestry***	***949***
Chapter 01	Agriculture, hunting and related service activities	788
Chapter 02	Forestry, logging and related service activities	161
Section B	***Fishing***	***46***
Section C	***Mining and quarrying***	***503***
Subsection CA	Mining and quarrying of energy producing materials	279
Chapter 10	Mining of coal and lignite; extraction of peat	238
Chapter 11	Extraction of crude oil and natural gas; services for oil and gas extraction, excluding surveying	38
Subsection CB	Mining and quarrying, except of energy producing materials	224
Section D	***Manufacturing***	***6226***
Subsection DA	Manufacture of food products, beverages and tobacco	2049
Subsection DB	Manufacture of textiles and textile products	306
Chapter 17	Manufacture of textiles	145
Chapter 18	Manufacture of wearing apparel; dressing and dyeing of fur	161
Subsection DC	Manufacture of leather and leather product	78
Subsection DD	Manufacture of wood and wood products	249
Subsection DE	Manufacture of pulp, paper and paper products; publishing and printing	160
Subsection DF	Manufacture of coke, refined petroleum products and nuclear fuel	49
Subsection DG	Manufacture of chemicals, chemical products and man-made fibres	209
Subsection DH	Manufacture of rubber and plastic products	131
Subsection DI	Manufacture of other non-metallic mineral products	715
Subsection DJ	Manufacture of basic metals and fabricated metal products	437
Subsection DK	Manufacture of machinery and equipment not classified elsewhere	867
Subsection DL	Manufacture of electrical and optical equipment	348
Subsection DM	Manufacture of transport equipment	285
Subsection DN	Manufacturing not classified elsewhere	343
Chapter 36	Manufacture of furniture; manufacturing not classified elsewhere	233
Chapter 37	Recycling	110
Subsection E	Electricity, gas and water supply	951
Total for all economic activities		**8,675**

Source: State Statistical Committee of Ukraine. Air Protection in 2003. Statistical Bulletin Based on Form 2-TP. Kiev, 2004.

ANNEX 2. ANALYSIS OF KEY NECESSARY CHANGES IN THE UKRAINIAN ENVIRONMENTAL LEGISLATION

Laws of Ukraine

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
Law of Ukraine On Environmental Protection No. 1264-XII of 25.06.1991 (as subsequently amended)	Section I. General Provisions	*Article 2. Environmental Legislation of Ukraine* The article states that environmental protection in Ukraine is governed by this law, as well as legislation on land, water, forestry, mineral resources, air protection, flora and fauna protection and use, and other special legislation consistent therewith. A new Law on Integrated Pollution Prevention and Control should become a key component of environmental legislation. The adoption of an IPPC Law would make it possible to bring together key provisions of the integrated permitting system and to ensure consistent adjustment of related regulatory elements, as mentioned below in comments to other existing Ukrainian legislation. Amendments to the current legislation should be introduced concurrently with adoption of this law.
	Section IV. Powers of Environmental Authorities	*Article 17. Competence of the Cabinet of Ministers of Ukraine in Environmental Protection* Under paragraph (e) of this article, the Cabinet of Ministers establishes the procedure for drafting and approval of environmental standards, limits on the use of natural resources, emission and discharge of pollutants into the environment, and placement of waste; and under paragraph (h), it makes decisions on the suspension (temporary) or termination of activities of enterprises, institutions, and organisations, regardless of their ownership and subordination, in case they violate the environmental legislation. These provisions should be coordinated with the competencies under the integrated permitting system. This comment applies also to *Article 18. Competency of the Government of the Autonomous Republic of Crimea in Environmental Protection.*
		Article 19. Competency of Executive and Administrative Bodies of the Local Councils in Environmental Protection Under paragraph (e), local Councils approve limits on the use of natural resources, emission and discharge of pollutants into the environment, and generation and placement of waste for enterprises, institutions, and organisations, as recommended by the bodies of the specially authorised central executive authority for environment and natural resources. The competency of the aforementioned authorities regarding large industry should be set in the IPPC Law, unless such competency is set forth in a uniform manner in the medium-specific legislation.
		Article 20. Competency of Specially Authorised Public Authorities in Environmental Protection and Use of Natural Resources When adopting the IPPC Law, provisions of paragraphs (f) and (g) of Article 20 on the issuance of permits for disposal/storage of waste and emissions of hazardous substances to the environment, and on restriction or closure of activities of enterprise operating in violation of the environmental legislation or permit requirements should be harmonised with the principles of the integrated permitting system.
		Article 21. Competencies of Public Associations in Environmental Protection Since the integrated permitting system sets special requirements for public participation, the provisions of this Article should be made more specific.

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
	Section VII. Standard-setting and Regulation in Environmental Protection	*Article 33. Environmental Standards* Environmental standards include emission limit values for polluting chemicals and levels of allowable negative impact of physical or biological factors. The Ukrainian legislation can stipulate standards for natural resource use and other environmental standards, taking into account applicable hygiene and epidemiological rules and standards. The provisions of this article should be expanded considerably to provide for environmental regulation based on the concept of best available techniques as interpreted in the IPPC Directive, taking into consideration both production techniques and the way the installation is designed, constructed, maintained, operated, and decommissioned. The concept of technical guidance based on BAT should also be introduced.
	Section XI. Environmental Safety Measures	*Article 51. Environmental Requirements for Placement, Design, Construction, Reconstruction, Launching, and Operation of Installations, Infrastructure, and Other Facilities* The article requires that enterprises that have a negative environmental impact, regardless of their age, should have pollution abatement equipment and devices to monitor the volume and composition of pollutants and characteristics of other negative impacts. It also requires that environmental impact and health impact assessment of the activity be conducted. The assessment should be conducted taking into account the requirements of environmental legislation, environmental carrying capacity of the area, environmental conditions of the planned site for the installation, environmental forecasts, socioeconomic development outlook for the region, and aggregate negative environmental impact of existing factors and facilities. When introducing the integrated permitting system, it would be appropriate to specify in this article that pollution prevention has priority over “end-of-pipe” treatment techniques, that BAT should be used, and by clarifying the procedure for using EIA for new installations and those undergoing changes and its linkage with the integrated permitting procedure.
	Section XIII. Environmental Emergencies	*Article 66. Accident Prevention and Cleanup* It would be appropriate to clarify that these issues are covered by permits for the installations governed by the integrated permitting system.
Ambient Air Protection Law of Ukraine No. 2707-XII of 16.10.1992, version No. 2556-III of 21.06. 2001	Section I. General Provisions	*Article 1. Definition of Terms* Key terms, such as “pollutant” or “pollutant emission limit value” should harmonised with the IPPC Law. Also, the terms “installation” and “operator” should be defined.
	Section II. Standard-setting and Regulation in Air Protection	*Article 5. Ambient Air Protection Standards* This article provides for establishing the following ambient air protection standards: • Environmental quality standards for ambient air; • Pollutant ELVs for stationary sources; • Standards for physical and biological impacts from stationary sources; • Requirements for the content of pollutants in exhaust gas and impact of physical factors from mobile sources; and • Technology-based standards for pollutant emissions. The development of technical guidance on best available techniques should be envisaged for various installation categories covered by the integrated permitting system. For such installations, standards for physical and biological impacts and technology-based emission standards should be regarded as minimum requirements (see also Article 7 below).

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
		Article 7. Standard Pollution Emission Limit Values for Stationary Sources Pursuant to this article, technology-based standards for pollutant emissions include: • Current technology-based standards – for existing types of industrial equipment and infrastructure with "the best existing production technology for processes of similar capacity"; • Long-term technology-based standards – for newly designed, constructed, or upgraded types of equipment and infrastructure, "taking into account the level of advanced domestic and international technologies and equipment". Within the framework of the integrated permitting system, the function of such requirements should be performed by technical guidance on BAT, which should be reflected in the law. At the same time, technology-based for the installations which do not fall under the integrated permitting system should become a part of sectoral general binding rules (GBRs).
	Section III. Ambient Air Protection Measures	*Article 11. Regulation of Pollutant Emissions into Ambient Air from Stationary Sources* The provisions of this article, which states that pollutant emissions into ambient air from stationary sources is possible once a permit is obtained from a territorial environmental authority in coordination with the territorial health authority, should be harmonised with the integrated permitting procedure as set forth in the IPPC Law.
		Article 12. Restriction, Temporary Ban (Suspension), or Termination of Pollutant Emissions into Ambient Air and Impact of Physical and Biological Factors on Its Condition The provisions of this article should be brought into line with the IPPC Law.
		Article 15. Ambient Air Protection Measures in the Event of Anthropogenic or Natural Emergencies It is necessary to specify that these issues should be covered in an integrated environmental permit for respective installations.
		Article 21. Noise Prevention and Reduction It is necessary to specify that these issues should be covered in an integrated environmental permit for respective installations.
	Section IV. Compliance with Ambient Air Protection Requirements in the Design, Construction, and Reconstruction of Enterprises...	*Article 23.Conditions of Design, Construction, and Reconstruction of Enterprises or Other Facilities that Have or Could Have Impact on the Ambient Air Quality* It is necessary to specify that these issues should be covered in an integrated environmental permit for respective installations.
Water Code of Ukraine No. 213/95-VR of 06.06.1995 (as subsequently amended)	Section I. General Provisions Chapter 1. Main Provisions	*Article 1.Definition of Main Terms* Key terms, such as "pollutant" or "pollutant emission limit value" should be harmonised with the IPPC Law. Also, the terms "installation" and "operator" should be defined.
		Article 8. Competence of the Supreme Council of the Autonomous Republic of Crimea, Oblast, Kiev, and Sevastopol City Councils in Water Regulation The competence of these bodies regarding industrial installations should be consistent with the provisions of the IPPC Law.
	Section II. Public Administration and Control in Water Use and Protection... Chapter 4. State, Inter-state, and Regional	*Article 14. Competence of the Cabinet of Ministers of Ukraine in Management of, and Control over, Water Use and Protection and Regeneration of Water Resources* Paragraph 10 about "making a decision to discharge wastewater from storage tanks into water bodies in the event of emergency" and paragraph 12 about "making a decision to restrict, temporarily ban (suspend) or terminate the activities of an enterprise… in case they violate the requirements of the water legislation" should be coordinated with the distribution of responsibilities in the integrated permitting system.

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
	Water Use and Protection Programmes...	*Article 15. Competency of Specially Authorised Central Executive Authority for Environment and Natural Resources in the Management of, and Control over, Water Use and Protection and Regeneration of Water Resources* *Article 16. Competency of Specially Authorised Central Executive Authority for Water Management in the Management of, and Control over, Water Use and Protection and Regeneration of Water Resources* The competencies of these authorities should be harmonised with the permitting procedure as stipulated in the IPPC Law.
	Chapter 8. Standard-setting and Regulation in Water Use and Protection and Regeneration of Water Resources	*Article 35. Standards for Water Use and Protection and Regeneration of Water Resources* *Article 39. Sectoral Technological Standards for the Generation of Substances Discharged into Water Bodies and Treatment Plants* Currently, the following standards are envisaged: • Pollutant effluent limit values; • Sectoral technological standards for the generation of substances discharged into water bodies; • Technological standards for water use. Within the framework of the integrated permitting system, the function of such requirements should be performed by technical guidance on BAT, which should be reflected in the law. For the installations covered by the integrated permitting system, sectoral technological standards should be regarded as minimum requirements. At the same time, technological standards for installations that do not fall under the integrated permitting system should become part of sectoral general binding rules (GBRs).
		Article 41. Regulation of Discharges into Water Bodies of Substances for Which There are No Standards for Water Use and Protection The requirements of this article should not apply to installations governed under the integrated permitting system, since wastewater discharges should be regulated taking into account best available techniques (BAT).
	Section III. Water Use Chapter 9. Water Users: Rights and Duties	*Article 42. Water Users* Given the definition of water users provided in this article, water users' rights and duties as specified further in Articles 43-45, and definition of an installation in the IPPC Law, it should be stated that water user installations subject to integrated permits are obliged to comply with the entire set of the BAT-based conditions of an integrated permit.
		Article 48. Special Water Use Article 48 defines special water use as "water intake from water bodies using structures or technical devices, use of water, or discharge of pollutants into water bodies." When harmonising the provisions of the IPPC Law and the Water Code, it is important to establish a link between the term "special water use" and the definition of installations regulated under the integrated permitting system.
		Article 49. Right to Special Water Use The article states that special water use is carried out based on a permit, that such a permit is issued at the water user's request justifying its need for water and coordinated with the state water authorities, that the permitting procedure for special water use is approved by the Cabinet of Ministers of Ukraine, that "the special water use permit sets limits for water intake, water use, and pollution discharges", and that special water use is granted for a fee. For the installations subject to integrated permits, these provisions should be harmonised with the uniform permitting procedure described in the IPPC Law.
		Article 50. Duration of Special Water Use The article states that special water use can be either short-term (up to three years) or long-term (three to twenty-five years). This provision does not apply to the installations regulated by integrated permits because the term of validity of an integrated permit should be determined by the IPPC Law.

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
		Article 55. Grounds for Terminating the Right to Special Water Use *Article 56. Procedure for Termination of the Right to Special Water Use* These articles should not apply to installations regulated by integrated permits because the IPPC Law should stipulate the procedure for revocation of an integrated permit.
	Chapter 14. Conditions of Wastewater Discharge into Water Bodies	*Article 70. Conditions of Wastewater Discharge into Water Bodies* *Article 71. Restrictions, Temporary Ban/Suspension or Termination of Wastewater Discharge into Water Bodies* Article 70 sets general requirements for wastewater discharges into water bodies and determines primarily the conditions in which water users are obliged to take measures to prevent or terminate wastewater discharges. Integrated permits set such requirements based on BAT and existing standards (see comments to Articles 35 and 39 above), taking into account environmental conditions. The provisions of this article and Article 71 should be coordinated with the IPPC Law.
		Article 74. Storage Reservoirs for Wastewater and Industrial Water Bodies The article states that "enterprises, institutions, and organisations that have storage tanks for industrial wastewater or mine, quarry, or pit water are obliged to introduce efficient treatment and recovery technologies and to rehabilitate land under such storage reservoirs. Such waters shall be discharged into surface water bodies in compliance with a special procedure coordinated with public environmental authorities." Such regulation should be covered by the integrated permitting system pursuant to the IPPC Law.
	Section IV. Water Protection Chapter 20.Water Protection Against Pollution or Depletion	*Article 96. Conditions for Placement, Design, Construction, Reconstruction, and Launching of Enterprises, Infrastructure, and Other Facilities That Might Affect Water Quality* *Article 98. Ban on Putting into Operation of Enterprises, Infrastructure, and Other Facilities That Might Affect Water Quality* For installations regulated by integrated permits the issues referred to in these articles are resolved based on the use of BAT. This should be reflected in the Water Code.
	Section V. Disputes over Issues of Water Use and Protection and Regeneration of Water Resources Chapter 22. Settlement of Disputes over Issues of Water Use and Protection...	*Article 109. Settlement of Disputes over Issues of Water Use and Protection and Regeneration of Water Resources* Within the framework of the integrated permitting system, the dispute settlement (appeal) procedure is uniform for all the media and it should be determined by the IPPC Law. This article should make a reference to the IPPC Law.
Waste Law of Ukraine No. 187/98-VR of 05.03.1998 (as subsequently amended)	Section I. General Provisions	*Article 1. Definition of Main Terms* Main terms should be harmonised with the IPPC Law. In particular, the terms "installation" and "operator" should be defined.
		Article 4. Scope of the Law The scope of the Law should be harmonised with the IPPC Law, and some of its provisions would only apply to installations that do not fall under the integrated permitting system.

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
		Article 7. Regulation of Waste Management The article states that waste generation limits and unit values for waste generation, raw materials use and losses in technological processes are set in the area of waste management. Within the framework of the integrated permitting system, the function of such requirements should be performed by technical guidance on BAT, which should be reflected in the law. For installations covered by the integrated permitting system, sectoral technological standards should be regarded as minimum requirements. At the same time, process requirements for installations that do not fall under the integrated permitting system should become a part of sectoral general binding rules (GBRs).
	Section III Waste Handlers, Their Rights and Duties	*Article 17. Duties of Enterprises in Waste Management* Only the paragraph on waste placement charges out of the provisions of the article directly applies to installations regulated under the integrated permitting system. The remaining provisions for such installations should be harmonised with the uniform permitting procedure as described in the IPPC Law.
	Section IV Competency of Executive Authorities and Local Self-Governance Authorities in Waste Management	*Article 18. Competency of the Cabinet of Ministers of Ukraine in Waste Management* *Article 19. Powers of the Autonomous Republic of Crimea in Waste Management* The powers of these bodies should be harmonised with the integrated permitting procedure as stipulated in the IPPC Law.
		Article 20. Powers of Local Public Administrations in Waste Management For installations regulated under the integrated permitting system, the following powers should be harmonised with the IPPC Law: Approval of limits for generation and placement of waste for enterprises; Revocation of a permit to operate an installation managing hazardous waste if it violates environmental standards and rules; Control over activities of enterprises in waste management; Issuance of permits for construction or reconstruction of an installation engaged in waste management; Issuance of permits for operation of an installation engaged in waste management.
		Article 23.Competency of a Specially Authorised Central Executive Authority in Waste Management The powers of environmental authorities referred to in this article regarding installations regulated by integrated permits should be harmonised with the integrated permitting procedure stipulated in the IPPC Law. Such powers include: • Coordination of activities of other executive authorities in waste management and enforcement of environmental safety requirements; • Exercise of state control over compliance with environmental safety requirements; • Control over enterprises' primary record-keeping for generation, collection, treatment, recovery, and disposal of waste and issuance of waste declarations; • Issuance of permits for waste management operations; and • Coordination of setting of waste generation and placement limits.
	Section V Public Record-keeping, Monitoring, and Information in the Area of Waste Management	*Article 26. Public Record-keeping and Issuance of Waste Declarations* When drafting regulations for the IPPC Law, it should be determined whether it would be possible and appropriate to use elements of current medium-specific documents (in particular, waste declarations) in a permit application and issuance of an integrated environmental permit.

Title	Section, Chapter	Proposals to Harmonise with the Integrated Permitting System
	Section VI Measures and Requirements for Prevention and Reduction of Waste Generation and Environmentally Safe Waste Treatment	*Article 31. Measures to Prevent or Reduce Waste Generation Volumes* *Article 32. Measures to Reduce or Prevent Negative Impact of Waste* *Article 33. Requirements for Waste Storage and Disposal* *Article 34. Hazardous Waste Management Requirements* Measures specified in Article 31, including: • Development and implementation of waste generation standards per unit of production, raw material or energy consistent with advanced technologies; • Periodic revision of established waste generation standards aimed to reduce its volume, taking into account advanced domestic and foreign experience and economic capabilities; • Establishing waste generation limits based on the approved standards (unit waste generation values), as well as relevant provisions of Articles 32-34 should be adjusted in accordance with provisions on BAT technical guidance for installations regulated by integrated permits, which should be incorporated into the IPPC Law. At the same time, safe waste management requirements for installations not subject to the integrated permitting system should become part of sectoral general binding rules (GBRs).
	Section VIII Violations in the Area of Waste Management and Related Liability	*Article 42. Violations in the Area of Waste Management* The paragraphs of this article on the violation of safe waste management requirements should be coordinated with provisions of the IPPC Law governing liability for violation of integrated permit conditions.

Decrees of the Cabinet of Ministers of Ukraine

Document Title	Proposals to Harmonise with the Integrated Permitting System
Decree of the CM of Ukraine No. 1598 of 29.11.2001 on Approval of the List of Most Common and Hazardous Pollutants whose Emissions into Ambient Air Are Subject to Regulation	The list includes "the most common pollutants" (NO_x, benz(o)pyrene, sulphur dioxide and other sulphur compounds, carbon monoxide, ozone, particulate matter, lead and its compounds, and formaldehyde) and "hazardous pollutants" (metals and their compounds, organic amines, volatile organic compounds, persistent organic compounds, chlorine, bromine and its compounds, fluorine and its compounds, cyanides, freons, arsenic and its compounds). This list should be revised and adjusted, in particular, taking into consideration the tentative list of substances in Annex III of the IPPC Directive and the Guidelines to the European Pollution Emission Registry (EPER) developed as per Article 3 of the European Commission Resolution of 17.07.2000 (2000/479/EC). Clearly, ozone should be excluded from the list because it refers to industrial emission control rather than ambient air monitoring. It would also be appropriate to clarify the definition of particulate matter.
Decree of the CM of Ukraine No. 1780 of 28.12.2001 on Approval of the Procedure for Development and Approval of Pollution Emission Limit Values for Stationary Sources	For installations subject to integrated permits, the IPPC Law should define the procedure for setting ELVs as integrated permit conditions, taking into account BAT. This Decree will only continue to apply to installations that will continue to be regulated by medium-specific permits.
Decree of the CM of Ukraine No. 302 of 13.03.2002 on Approval of the Procedure for Performance of, and Payment for, Works Related to the Issuance of Permits for Pollutant Emissions into Ambient Air from Stationary Sources and Registration of Enterprises, Institutions, Organisations, and Entrepreneurs that Obtained Such Permits	This Decree should be re-drafted taking into consideration various permitting regimes (integrated, GBR-based, medium-specific). With respect to integrated permitting, it should be harmonised with the IPPC Law.
Decree of the CM of Ukraine No. 300 of 13.03.2002 on the Procedure for Drafting and Approval of Standard Limits for Physical and Biological Impact from Stationary Pollution Sources on Ambient Air	For installations subject to integrated permits, the IPPC Law should determine the procedure for setting integrated permit conditions regarding noise and vibration in accordance with best available techniques. The provisions of this Decree should not apply to installations governed by the IPPC Law.
Decree of the CM of Ukraine No. 432 of 29.03.2002 on Approval of the Procedure for Issuance of Permits for Operation of Equipment with Certain Levels of Physical and Biological Impact on Ambient Air Quality, Payment for Such Works, and Registration of Enterprises, Institutions, Organisations, and Entrepreneurs that Obtained Such Permits	For installations subject to integrated permits, the IPPC Law should determine the procedure for setting integrated permit conditions regarding noise and vibration, taking into account best available techniques. The provisions of this Decree should not apply to installations governed by the IPPC Law.
Decree of the CM of Ukraine No. 1100 of 11.09.1996 (as amended in 2002) on the Procedure for Drafting and Approval of Statutory Pollution Emission Limit Values and the List of Regulated Pollutants	For installations subject to integrated permits, the IPPC Law should determine the procedure for setting ELVs as integrated permit conditions, taking into account best available techniques. This Decree will only continue to apply to installations that will continue to be regulated by medium-specific permits.
Decree of the CM of Ukraine No. 465 of 25.03.1999 on the Rules of Surface Water Protection Against Wastewater Pollution	For installations subject to integrated permits, the IPPC Law should determine the procedure for setting integrated permit conditions regarding wastewater discharge, taking into consideration BAT. The provisions of this Decree should not apply to installations governed by the IPPC Law.

Document Title	Proposals to Harmonise with the Integrated Permitting System
Decree of the CM of Ukraine No. 2034 of 01.11.1999 on Approval of the Procedure for State Registration and Declaration of Waste	The provisions of this Decree should be harmonised with the IPPC Law and regulations to it, setting record-keeping and reporting requirements in waste management for installations subject to integrated permits.
Decree of the CM of Ukraine No. 1218 of 03.08.1998 on Approval of the Procedure for Drafting, Approval, and Revision of Waste Generation and Placement Limits	For installations subject to integrated permits, the IPPC Law should determine the procedure for setting integrated permit conditions regarding waste management, taking into consideration BAT. The provisions of this Decree should not apply to installations governed by the IPPC Law.

Departmental Regulations

Document Title	Proposals to Harmonise with the Integrated Permitting System
Order of the Ministry of Environmental Protection No. 66 of 14.02.2002 on Arrangement of Activities to Develop and Approve Statutory Pollution Emission Limit Values for Stationary Sources	In particular, the Order designates the Ukrainian Research Centre for Technical Ecology (UkrNTEC, Donetsk) as a head organisation for the creation and maintenance of a database of best existing emission reduction technologies; however, the allocated funding has never been disbursed. The problem would have to be resolved to implement the IPPC Law, including the development of sectoral guidance on best available techniques affecting all the issues of integrated environmental permitting.
Order of the Main Environmental Inspectorate of the MEP No. 7 of 28.03.1994 on the Methodological Guidance on the Procedure for Inspecting Users of Natural Resources for Compliance with Environmental Legislation	When the IPPC Law is adopted and the integrated environmental permitting system is introduced, relevant changes should be introduced in the current state environmental control system, providing for cross-media control not only over levels of pollution and availability of documentation, as is the case at present, but also over key operational indicators related to other permit conditions.
Instruction of the State Committee for Environment of the USSR of 1990 on the Regulation of Pollutant Emissions into the Atmosphere and Water Bodies	The provisions of this Instruction should not apply to installations regulated within the integrated permitting system under the IPPC Law.
Order of the Gosstroy (State Construction Committee) of Ukraine No. 214 of 15.12.2003, State Construction Standards DBN A.2.2-1-2003, *Composition and Content of Materials on Environmental Impact Assessment (EIA) in the Design and Construction of Enterprises, Buildings, and Infrastructure (Basic Design Provisions)*	During the development of the IPPC Law, the issue of coordination between the EIA and integrated environmental permitting procedures for new installations should be resolved and relevant changes should be introduced to this document.
Minrybkhoz (Ministry of Fisheries) of USSR, 1990. Combined List of Maximum Allowable Concentrations (MACs) and Tentatively Safe Impact Levels (TSIL) of Hazardous Substances for Fishery Water Bodies	This list should be revised and adjusted, in particular, taking into consideration the tentative list of substances in Annex III of the IPPC Directive and the Guidelines to the European Pollution Emission Registry (EPER) developed as per Article 3 of the European Commission Resolution of 17 July 2000 (2000/479/EC).
Order of the Gosstandart (State Standards Committee) of Ukraine No. 58 of 23.02.1995. DSTU 3013-95 Hydrosphere. Rules of Control over Drainage of Rainwater and Snow Melt from the Territory of Cities and Industrial Enterprises	It should be taken into account that the storm water runoff issues are covered by integrated environmental permits. The rules for industrial installations subject to integrated permitting should be harmonised with the IPPC Law.

Document Title	Proposals to Harmonise with the Integrated Permitting System
State Sanitary Rules and Standards, Ministry of Health of the USSR, 1988. SanPiN No. 4630-88. Sanitary Rules and Standards of Surface Water Protection Against Pollution	The provisions of this Instruction should not apply to installations regulated within the integrated permitting system under the IPPC Law.
Guidelines of 06.05.2002. KDP 204-12. Rules of Acceptance of Industrial Wastewater into Communal and Departmental Sewerage Systems of Cities and Villages of Ukraine	It should be taken into account that the issues of industrial wastewater discharges into sewerage systems are covered by integrated environmental permits. The rules for installations subject to integrated permitting should be harmonised with the IPPC Law.

ANNEX 3. SCORES FOR THE INDUSTRIAL SECTOR PRIORITISATION

Weighting factors						**4**	**2**	**3**	**2**	**1**	**1**	
Industrial activities	Environmental impact (EI)						Potential for environmental improvement	Anticipated compliance costs	Financial performance	Export orientation	No. of enterprises	**Overall score**
	air	water	waste	soil	accident risk	total EI						
Fuel & energy industry	3	2	2	2	3	2.4	3	1	2	2	2	**4.43**
Pulp & paper industry	1	2	2	1	2	1.6	2	2	2	2	3	**4.23**
Surface treatment by electrolytic and chemical processes	2	3	2	1	2	2.0	2	2	2	1	2	**4.17**
Waste management	2	1	1	2	1	1.4	2	2	2	0	1	**4.12**
Mining industry	3	2	3	2	2	2.4	2	1	2	3	1	**4.10**
Production and processing of metals	3	3	3	1	2	2.4	3	1	1	2	1	**3.93**
Chemical industry	1	3	1	2	3	2.0	2.5	1	2	2	1	**3.83**
Processing of minerals	2	1	1	1	1	1.2	1	2	3	2	2	**3.80**
Food production	1	3	2	1	1	1.6	2	1	2	1	3	**3.57**
Surface treatment by organic solvents	1	2	2	1	1	1.4	2	1	2	1	2	**3.27**
Intensive poultry or pig farming	1	1	1	2	1	1.2	1	2	1	2	1	**2.97**