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ADDENDUM TO THE POSITION PAPER OF THE REPUBLIC OF LATVIA

Chapter 22: "Environment"

ANNEXES 18-25

Annex 18

Industrial plants, referred to in the Daughter Directives of the Dangerous Substances Directive 76/464/EEC

Type of industrial plant	Dangerous substance emitted	Enterprises in Latvia	Notes
1. Carbon tetrachloride production by perchlorination	**Carbon tetrachloride**		According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **carbon tetrachloride** is prohibited in Latvia as from January 1 2001.
2. Production of chloromethanes by methane chlorination (including high-pressure electrolytic chlorine generation) and from methanol	**Carbon tetrachloride** **Chloroform**		According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **carbon tetrachloride** is prohibited in Latvia as from January 1 2001.
3. Production of chlorofluorocarbons	**Carbon tetrachloride** **Chloroform** **Perchloroethylene**		According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **carbon tetrachloride** is prohibited in Latvia as from January 1 2001. According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **15 chlorofluorocarbons** is prohibited in Latvia as from January 1 2001.
4. Production of DDT including formulation of DDT on the same site	**DDT**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **DDT**. The Regulations entered into force in March 23, 2000.
5. Production of sodium pentachlorophenate by hydrolysis of hexachlorobenzene	**Pentachlorophenol**		

6. Production of aldrin and/or dieldrin, including formulation of these substances on the same site	**Aldrin, dieldrin, isodrin or endrin**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **aldrin, dieldrin or endrin**. The Regulations entered into force in March 23, 2000.
7. HCB production and processing	**Hexachlorobenzene**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **hexachlorobenzene**. The Regulations entered into force in March 23, 2000.
8. Production of perchloroethylene (PER) and carbon tetrachloride(CCl4) by perchlorination	**Hexachlorobenzene Hexachlorobutadiene**		According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **carbon tetrachloride** is prohibited in Latvia as from January 1 2001.
9. Production of trichloroethylene and/or perchloroethylene by any other process	**Hexachlorobenzene Hexachlorobutadiene**		
10. Production of chloromethanes from methanol or from a combination of methanol and methane (i.e. by hydrochlorination of methanol, then chlorination of methyl chloride)	**Chloroform**		
11. Production only of 1,2-dichloroethane (without processing or use on the same site)	**1,2-dichloroethane**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **1,2-dichloroethane**. The Regulations entered into force in March 23, 2000.

12. Production of 1,2-dichloroethane, and processing or use at the same site, except for the use defined in (15) below	**1,2-dichloroethane**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **1,2-dichloroethane**. The Regulations entered into force in March 23, 2000.
13. Processing of 1,2-dichloroethane into substances other than vinyl chloride	**1,2-dichloroethane**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **1,2-dichloroethane**. The Regulations entered into force in March 23, 2000.
14. Use of EDC for degreasing metals (away from an industrial site covered by (12)	**1,2-dichloroethane**		
15. Use of EDC in the production of ion exchangers	**1,2-dichloroethane**		
16. Trichloroethylene (TRI) and perchloroethylene (PER) production (TRI-PER process)	**Trichloroethylene Perchloroethylene**		

17. Use of TRI for degreasing metals		1) SJSC "Latvijas dzelzcels" Turgeneva Str. 14, Riga 2) SJSC "Latvijas dzelzcels", Rigas lokomotivju depo, Krustpils Str. 24, Riga 3) SJSC "Latvijas dzelzcels", Rigas vagonu depo, Ganibu dambis 20, Riga 4) SJSC "Latvijas dzelzcels", Zasulauka lokomotivju depo, Kandavas Str. 42a, Riga 5) Ltd. "VEF un KO" Bitenu Str 14, Aizkraukle 6) J.St.C. "Ventspils nafta" Talsu Str. 75, Ventspils 7) Ltd. "Slokenbeka" p/n Milzkalne, Tukums district 8) PJSC "Grindeks", Krustpils Str. 53, Riga	
18. Carbon tetrachloride and perchloroethylene production (TETRA-PER processes)	**Perchloroethylene**		According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **carbon tetrachloride** is prohibited in Latvia as from January 1 2001.
19. Use of PER for degreasing metals	**Perchloroethylene**		
20. Production of TCB via dehydrochlorination of HCHand/ or processing TCB	**Trichlorobenzene**		
21. Production and/or processing of chlorobenzene via chlorination of benzene	**Trichlorobenzene**		
22. Chlor-alkali electrolysis industry	**Mercury**		

23. Chemical industries using mercury catalysts in the production of vinyl chloride	**Mercury**		
24. Chemical industries using mercury catalysts in other processes	**Mercury**		
25. Manufacture of mercury catalysts used in the vinyl chloride production	**Mercury**		
26. Manufacture of organic and non-organic mercury compounds (except for products referred to in point 25)	**Mercury**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **mercury compounds**. The Regulations entered into force in March 23, 2000.
27. Manufacture of primary batteries containing mercury	**Mercury**		
28. Non-ferrous metal industry – mercury recovery plants	**Mercury**		
29. Non-ferrous metal industry – extraction and refining of non-ferrous metals	**Mercury**		
30. Plants for the treatment of toxic wastes containing mercury	**Mercury**	1) IE "Smaids", Gaujas Str. 12, Cesis 2) Ltd. "Lampu demerkurizacijas centrs", Kapsedes Str. 10, Liepaja	
31. Zinc mining, lead and zinc refining, cadmium metal and non-ferrous metal industry	**Cadmium**		
32. Manufacture of cadmium compounds	**Cadmium**		
33. Manufacture of pigments	**Cadmium**		
34. Manufacture of stabilisers	**Cadmium**		

35. Manufacture of primary and secondary batteries	**Cadmium**		
36. Electroplating	**Cadmium**	1) J.St.C. "Jelgavas masinbuves rupnica" Kr. Barona Str. 40, Jelgava	
37. Manufacture of phosphoric acid and/or phosphatic fertiliser from phosphatic rock	**Cadmium**		
38. Plant for the production of HCH	**Hexachlorocyclohexane**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **hexachlorocyclohexane**. The Regulations entered into force in March 23, 2000.
39. Plant for the extraction of lindane*	**Hexachlorocyclohexane**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **hexachlorocyclohexane**. The Regulations entered into force in March 23, 2000.
40. Plant where the production of HCH and extraction of lindane is carried out	**Hexachlorocyclohexane**		According to the CM Regulations No 107 "On prohibited plant protection products", it is prohibited in Latvia to import, distribute and use plant protection products that contain **hexachlorocyclohexane**. The Regulations entered into force in March 23, 2000.
Chemical industry	**Chloroform**	1) PJSC "Grindeks" Krustpils Str. 53, Riga 2) J.St.C. "Olainfarm" Rupnicu Str. 5, Olaine, Rigas rajons	
	Carbon tetrachloride	1) PJSC "Grindeks" Krustpils Str. 53, Riga 2) J.St.C. "Ventbunkers" Sanatorijas Str. 29, Ventspils 3) J.St.C. "Ventamonjaks" Dzintaru Str. 66, Ventspils *Note: information is for year 2000 before the prohibition was introduced.*	According to the Cabinet of Ministers (CM) Regulations No 409 "On the protection of ozone layer" production and import of **carbon tetrachloride** is prohibited in Latvia as from January 1 2001.

* Lindane means a product containing at least 99% of the g-isomer of 1,2,3,4,5,6 - hexachlorocyclohexane

Implementation steps for implementation of directive on Discharges of Dangerous Substances (76/464/EEC and "daughter directives)

Steps to be taken	Time	Notes
Competent Authorities, responsible for implementation, designated	Completed	
System of prior authorisation for discharges of List I and List II substances established	Completed	Permits issued before February 1, 2002 will be revised by October 1, 2002
Specific List I substances identified	October 1, 2001	
Emission limit values for List I substances laid down	October 1, 2001	
Specific List II substances relevant for Latvia identified	October 1, 2001	
Quality objectives for all List II substances laid down	Upon accession	
Legal transposition completed, emission limit values and quality objectives become legally binding	February 1, 2002	
Emission limit values for List I substances to be complied with by all operators	Upon accession	
All enterprises that emit List I substances identified	Partially completed	Will be revised till 1 April 2002
Sources that emit List II substances identified	1 April 2002	
Upgrading of the reporting and information collecting system ("Ūdens – 2") completed	Completed	
Upgrading of the monitoring programme completed	Upon accession	
Pollution reduction programmes for list II substances established	Upon accession	
Pollution reduction programmes implemented	Within 5 years after adoption	

Relevant provisions of the Law on Pollution

Section 19 Classification of polluting activities and a permit for operation of a polluting activity

(1) Polluting activities shall be subdivided into categories A, B, and C considering pollution level and impact on or risk for human health and the environment caused by these activities.

(2) The requirements of Chapter II shall apply also to the activities, which are not covered by category A, B, or C, but still may create pollution.

(3) In order to start or continue a category A or B polluting activity, the operator shall obtain a permit – a written decision issued by Regional Environmental Board that applies to a production unit, to whole or a part of an installation (hereinafter – installation) or several installations, which are located on the same site and operated by the same operator. The permit authorises operation of a polluting activity provided the installation complies with the requirements of this written decision and legislation.

Section 20 Category A polluting activities

(1) Category polluting activities are those carried out by installations listed in Annex to this Law. The operator of category A activity shall apply best available techniques.

(2) Stationary technological units, where one or several polluting activities referred to in Annex to this Law are operated, shall obtain a category A permit. The category A permitting conditions shall apply to these installations, taking into account pollution level or risk for human health and the environment caused by the installation, in conformity with the parameters defined, taking into account also polluting activities of technically associated installations that may have an impact on the emissions and environmental pollution.

(3) The thresholds given in Annex to this Law shall refer either to production capacities or outputs. The operator, who carries out several polluting activities referred to in Annex to this Law, shall add together the capacities of these activities if they are falling under the same branch of industry, referred to in Annex, and if they are carried out in the same installation or on the same site.

(4) Category A permits shall not be required for installations used for research, development and testing of new products or processes.

(5) The Cabinet of Ministers shall issue the regulations on application for a category A permit, issuing of the relevant permit, use of best available techniques, and:

1) determine a time plan for permitting of installations that needs a category A permit;
2) fix the maximum transitional period, which may be granted to achieve compliance with the permit conditions related to application of best available techniques;
3) approve a permit form and application form, specifying the measures for protection of human health, air, water and soil, and for waste management. If a polluting activity includes also water extraction, the permit shall also include water use limits;
4) determine an application and permitting procedure;
5) determine a procedure for making an application available to the public and enabling public comments and the procedure for making permit conditions, results of monitoring and control available to the public;
6) determine the procedure for forwarding the information to the other states and a monitoring procedure for cases where trans-boundary pollution may occur.

Section 22 Category B polluting activities

(1) Category B polluting activities means polluting activities, which need a category B permit to be started, continued or substantially changed.

(2) The Cabinet of Ministers shall identify category B activities, taking into account their pollution level, impact on or risk for human health or the environment, the Cabinet shall approve also an application form and permit form and determine the application and permitting procedure. If a polluting activity includes also water extraction, the category B permit shall also include water use limits.

(3) The Cabinet of Ministers shall determine the procedure for making available to the public permit conditions for a category B polluting activity and results of [relevant] monitoring and control.

Section 23 Category C polluting activities

(1) Category C polluting activities means those activities, which do not need a permit, but which shall be notified to environmental authorities before the operation is started or substantial change in operation is made.

(2) The Cabinet of Ministers shall identify category C activities taking into account pollution level, impact on or risk for human health or the environment caused by these activities, as well as the content of the notification and the notification procedure.

Annex 20

Implementation plan of the Fish Waters Directive 78/659/EEC

Institution	Steps taken	Years	Costs (EUR)	Number of additional staff	Remarks
MEPRD	Full transposition	1st march 2002	Not additional	With existing staff	Draft in preparation
MEPRD and Ministry of Agriculture	Adoption of Monitoring Programme	1st January 2003	Not additional	With existing staff	
MEPRD – Danish EPA	Bilateral Assistance Project ''Support to MEPRD of Latvia in Water sector''	2001 – 2002	Not additional	With existing staff	Project ongoing
Latvian Environment Agency	Elaboration of Monitoring Programme	2001 – 2002	Not additional	With existing staff	Elaboration ongoing
Latvian Environment Agency	Preparation of Water quality maps	1st January 2003	33900 EUR	2	Based on results of 2nd water quality investigation by REPB
Regional Environment Protection Boards (REPB)	2nd Water quality mapping	1998 – 2002	Not additional	With existing staff	Investigation ongoing
Ministry of Agriculture	Adoption of the List of Salmon Rivers	1st January 2003	Not additional	With existing staff	
Fishery Research Institute	Investigation of salmon rivers	2002	67800 EUR	4	
State Environment Inspectorate (SEI)	Control of Salmon rivers	2002, ongoing	67800 EUR	4	4 in SEI -equipment and transport
TOTAL:			**169500 EUR**	**10**	

Legal acts for nature protection

Laws

Title	Adopted in
Law on Specially Protected Nature Territories Amendments	1993 1997
Law on Helsinki conventions of 1974 and 1992 on Protection of Marine Environment of the Baltic Sea Area	1994
Hunting Law	1995
Fishery Law	1995
Law on Convention of 2.02.1971. on Wetlands of International Importance, Especially as Waterfowl Habitats	1995
Law on Rio de Janeiro Convention of 05.06.1992 on Biological Diversity	1995
Law on Restoration of Property Rights to Land occupied by Particularly Protected Nature Objects	1995
Law on Washington Convention of 1973 on International Trade with Endangered Species of Wild Fauna and Flora	1996
Law on Bern Convention of 1979 on the Conservation of European Wildlife and Natural Habitats	1996
Law on Protected Belts	1997
Law on Convention on World Heritage	1997
Law on Kemeri National Park New redaction of the Law	1997 2001
Law on Ziemelvidzeme Biosphere Reserve Amendments	1997 2001
Law on Environmental Impact Assessment Amendments	1998 2001
Law on Bonn Convention of 1979 on the Conservation of Migratory Species of Wild Animals	1999
Law on Protection of Animals	1999
Forest Law	1999
Law on Gauja National Park	1999
Law on Grīņi Nature Reserve	2000

Law on Moricsala Nature Reserve	2000
Law on Teiči Nature Reserve	2000
Law on Krustkalni Nature Reserve	2000
Law on Protection of Species and Habitats	2000

Secondary legislation

Title	Adopted in
Hunting Regulations	1995
Statute of Specially Protected Territory "Abava Valley"	1996
Cabinet of Ministers Regulations on Establishing of Specially Protected Territory "Abava Valley"	1996
Regulations On Council of the Specially Protected Territory "Abava Valley"	1997
General Regulations on Conservation and Use of the Particularly Protected Nature Territories	1997
Cabinet of Ministers Regulations "On the State Environment Monitoring"	1997
Cabinet of Ministers Regulations on Nature Park Lake Engure	1998
Cabinet of Ministers Regulations on Methods of Determining the Protected Belts of Baltic sea and Riga Gulf	1998
Cabinet of Ministers Regulations on Methods of Determining the Protected Belts of Water bodies and Watercourses	1998
Cabinet of Ministers Regulations on the Order of Licensed Amateur Fishing - Angling - in Waters of Republic of Latvia	1998
Cabinet of Ministers Regulations on Trade with Endangered and Protected Species of Plants and Animals	1999
Cabinet of Ministers Regulations on Protected Landscape Territories	1999
Cabinet of Ministers Regulations on Nature Parks	1999
Cabinet of Ministers Regulations on Nature Reserves	1999
Cabinet of Ministers Regulations on Protection and Use of Nature Reserve "Liepaja lake"	2000
Cabinet of Ministers Regulations on Protection and Use of Nature Reserve "Babite lake"	2000
Cabinet of Ministers Regulations on the Protection and Use of North Vidzeme Biosphere Reserve	2000

Cabinet of Ministers Regulations on the Protection and Use of Nature Reserve "Abeli"	2000
Cabinet of Ministers Regulations on the Protection and Use of Nature Reserve "Parabaine"	2000
Cabinet of Ministers Regulations on the Protection and Use of Nature Reserve "Pededzes lejtece"	2000
Cabinet of Ministers Regulations on the Protection and Use of Nature Reserve "Lubānas ieplakas"	2000
Cabinet of Ministers Regulations "Lists of Specially Protected Species and Specially Protected Species of Limited Use"	2000
Cabinet of Ministers Regulations "Lists of Specially Protected Habitats"	2000
Cabinet of Ministers Regulations "On the Establishment, Protection and Management of Micro-reserves"	2001
Cabinet of Ministers Regulations "On the Order of Issuing Permits for Introduction, Reintroduction and Capturing of Individuals of Non-huntable Species"	2001
Cabinet of Ministers Regulations "On Compensation for Damage for Extermination or Impairment of Individuals of Specially Protected Species and Specially Protected Habitats"	2001
Cabinet of Ministers Regulations "On the Protection and Use of Slitere National Park"	2001
Cabinet of Ministers Regulations on Angling	2001
Cabinet of Ministers Regulations on Protected Dendrological Objects	2001
Cabinet of Ministers Regulations on Geological and Geomorphologic Nature Monuments	2001

PROJECT IMPLEMENTATION PLAN
"Preparation for Latvia's compliance with the EMERALD and NATURA 2000 Networks of Protected Areas

ACTIVITIES	2000												2001												2002					
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Inception period																														
1. Review of current SPT system																														
1. 1. Review of available information																														
1. 2. Assess Needs for Information																														
1. 3. Comparison of SPTs with IBAs.																														
1. 4. Review of legal framework																														
1. 5. Assessment of meeting EU requirements																														
2. Field Surveys and inventories																														
2. 1. Planning of field surveys and investigations																														
2. 2. Negotiations on sub-contracts for fieldwork																														
2. 3. Implementation of field surveys and inventories																														
3. Development and operation of Emerald (Natura 2000) database																														
3. 1. Clarification of links to earlier databases																														
3. 2. Establishment of EU requirements re database																														
3. 3. Development and dissemination of guidelines																														
3. 4. Establishment and operation of Emerald/Natura 2000 database																														
4. Establishment of boundaries of ASCIs																														
4. 1. Assessment of boundary issues																														
4. 2. Ensure participation of key stakeholders																														
4. 3. Undertake boundary investigations																														
4. 4. Undertake mapping of ASCI boundaries																														
4. 5. Review and implement legal requirements related to ASCIs																														

Institutional development in the area of Nature Protection

Present Status of Conservation Areas

There are currently more than 250 so-called Specially Protected Territories (SPT) established under the Law on Specially Protected Nature Territories. This includes 3 National Parks, 3 State Nature Reserves, and over 240 other nature reserves corresponding to roughly an area of 400,000 ha. Another large area of approximately 400,000 ha has been identified as a Biosphere Reserve (The Northvidzeme Biosphere Reserve). Some of the SPTs are included in the Biosphere Reserve and likewise minor SPTs (other nature reserves) may also be situated within the borders of the three National Parks (e.g. in Gauja National Park). This means that the total area cannot be calculated by simple addition. However, there is approximately 800,000 ha of the Latvian territory where the present conservation values (nature, culture or landscape values) are protected to a certain degree.

It is accepted that approximately another 100 sites will have to be identified during the next couple of years in order to fulfil the requirements of the Birds and Habitats Directives. The final selection of sites for the Natura 2000 network will most likely be less than the total identified number. A general judgement is that around 300 Specially Protected Nature Territories might be sufficient to meet the requirement of the Birds and Habitats directives.

The MEPRD has presently a relatively good record of the SPTs. The remaining number of sites still to be identified as SPAs and SACs will represent quite a small area. This will correspond to roughly 5 % of the total protected area in Latvia (SPTs and the Biosphere reserve) or approximately 40,000 ha.

Continuation of Research and Surveys

Data collection and monitoring is the work undertaken by external institutions and individuals on special assignments under the responsibility of the Latvian Environment Agency (LEA). At present most of the scientific data collection and work is sub-contracted to capacities outside the governmental system, but compiled by the LEA.

The LEA is a new institution. It was formed in October 2000 by merging the Latvian Environmental Data Centre (LEDC) with the Environmental Consultation and Monitoring Centre (ECMC). The LEA will maintain environmental databases on behalf of the MEPRD and will specifically include the STATUS database of key species and habitats within Latvia, as well as the databases for the Emerald and Natura 2000 networks.

At present, there are management plans for around 40 Special Protected Territories covering many of Latvia's largest and most important biodiversity conservation areas. Many SPTs for natural habitat types such as raised bogs do not need Management Plans. Various projects funded by the MEPRD, by national and international NGOs and international funding agencies are steadily developing management plans for some of the remaining protected areas and for certain species.

For protected areas that fall under the administration of national parks or nature reserves it may be the case that the management and scientific staff of the parks/reserves will be able to perform both monitoring and maintenance activities as part of the day-to-day work.

For 'cultivated' land either exploited for agriculture or for forestry, there will be additional work in relation to monitoring, reporting and maintenance. The present level of monitoring and reporting is not sufficient. Both staff and training is required to establish sufficient monitoring and reporting. However, taking into account additional resources allocated for the Nature protection Latvia will ensure adequate monitoring and reporting upon accession. Presently the responsibility lies with the Latvian Environment Agency together with the Regional Environmental Boards. Co-operation has been initiated between the MEPRD and the Ministry of Agriculture. Pilot sites will be established in cultivated or formerly cultivated areas (e.g. meadows and extensively harvested forest areas) where it is desirable to continue present or former practices, e.g., haymaking, grazing and/or draining to maintain the present status and conservation value. The results from these pilot sites are important for cost assessment, i.e., what management is necessary, frequency of management operations as well as what kind of management agreements can be made with, for example, private farmers.

For areas where the natural resources are not being used for commercial purposes, it is assumed that only limited and occasional management operations are required. For example, cutting of reeds around lakes to maintain suitable breeding sites for birds, repair of infrastructure if any, or perhaps regulation of the water level in wetlands. However, further the monitoring and reporting are required in the protected cultivated areas and needs strengthening.

The fourth category of possible areas for protection is land where certain effort is necessary to restore the conservation value. Relatively large investments may be required for such nature restoration. When the restoration work is finalised, it is assumed that the land after a period of natural regeneration of vegetation and species will fall into one of the three above categories and be managed and maintained as such.

Staffing

Ministry of Environmental Protection and Regional Development (Nature Protection department) is responsible for the policy making and development of legal acts in the area of nature protection.

The Nature Protection Department is the key agency responsible for biodiversity conservation and nature protection in Latvia, including policy, planning, legislation, international conventions, treaties and project co-ordination. The MEPRD is also responsible for the transposition and implementation of the EU legal and environmental requirements associated to the two directives.

Under the MEPRD the State Environmental Inspectorate (SEI) and the Regional Environmental Boards (REBs) are responsible for policy implementation and control at the local level. The recent institutional changes related to nature conservation have had limited effects on the SEI in terms of staffing and responsibilities. The local authorities will remain

responsible for maintenance and management of protected areas, except for those areas under the direct control of MEPRD or the State Forest Service (SFS).

Some of the protected areas have their own administration. Consideration should also be made in relation to the tasks and responsibilities presently being part of the management of the National Parks and Nature Reserves already in operation in Latvia. Presently they cover an area of almost ha. 200.000 which is around 25% of the protected territories in Latvia of where the Northern Biosphere Reserve alone covers an area of ha. 400.000.

Table 1 below provides figures on the present status of natural parks and reserves in operation in Latvia. Both in terms of number of employees, area size, yearly expenditures and proportionally the involvement of professional staff such as biologists, forest ecologist and other expertise areas that would be involved in the implementation of the Birds and Habitats Directives.

Table 1: Yearly costs, number of employees, area of National Parks and Reserves in Latvia

National Parks and Reserves	**ha**	**Num. of staff (monitoring and scientific staff)**	**Year 2000, EUR**
Slitere national park	16,145	36 (19)	179 631
Teicu nature reserve	19,241	21 (15)	138 764
North Vidzeme reserve	14,054*	8 (4)	96 937
Kemeri national park	38,139	16 (12)	144 158
Gauja national park	97,778	120 (60)	822 841
Total	**185,357**	201 (110)	**1 382 331**

* The parts of the 400.000 ha biosphere reserve with reserve status.

Institutions and employees involved in implementation of EU nature protection sector requirements in Latvia are shown in Table 2. The estimates have been discussed with officials from the MEPRD, but should be considered with the uncertainties related to the process of selecting the SPAs and SACs as well as the management of these areas.

Table 2: Institutions and employees involved in implementation of EU nature protection sector requirements in Latvia.

Institutions	Number of employees	Administration	Professionals
Slitere National Park	36	17	19 (7 inspectors, 12 other specialists)
Kemeri National Park 1)	18	2	11 (6 inspectors, 5 specialists)
Gauja National Park	120		(25 inspectors)
North Vidzeme Biosphere Reserve	8	4	4 (ecologist, inspector, geologist, forest specialist)
Teicu Nature Reserve	21	6	15 (6 inspectors, 3 research specialists, 6 technical staff)

Other protected territories	2)		
Latvian Environment Agency (LEA)	5		
State Environmental Inspectorate (SEI)	10		
Regional Environmental Boards (REB)	8		
MEPRD	8		

1) Total staff, not including administrative staff and staff working in wood processing units;

2) Daugavpils regional municipality is responsible for the administration of Nature Park "Daugavas loki". The NGO *Engure Lake Fund* has been formed for management of Engure Nature Park. Pape lake reserve has been managed by the local government enterprise "Niedra". Municipalities manage the remaining specially protected nature areas. Total number of employees is not available, because in many cases it is not full time employment.

The implementation of EU IPPC Directive in Latvia

Content

Executive summary

Due to the limited institutional and financial capacity Latvia has decided to implement the directive on a minimum basis by not extending the list of IPPC categories mentioned in annex I to the directive. However, for non-IPPC installations the approach of integrated permits will also be gradually introduced (Category B permits) with the exeption only of BAT requirement.

This means that IPPC permits should be issued for the current approximately 59 IPPC annex I installations before 2007 and IPPC Permitting for all new IPPC installations and substantial changes in existing installations in Latvia is a requirement from 1 January 2002, according to the Law on Pollution, which is already adopted by the Parliament of the Republic of Latvia. The reason of higher number of IPPC installations in some of the previous studies was the fact that several enterprises have been closed, others reduced the scope of production or after a more careful investigation appeared not to be corresponding to Annex I.

A transition scheme is a part of the Regulations of the Cabinet of Ministers on order of applying for and issuing of category A permits (IPPC permits). The transition scheme will outline when the installations in different IPPC sectors will be required to apply for an IPPC permit. They may also apply earlier, it is expected that for example the 7 IPPC pilot companies taking part in the Danish project will do so.

Criteria for the transition scheme should be as follows, assuming that all existing IPPC enterprises should have permit by 2007:

To ensure sufficient institutional capacity and a smooth transition period, IPPC permitting should take place gradually during 2001-2007 so that the permitting authority each year prepares approximately the same number of IPPC permits.

- IPPC installations in sectors, which will have relatively low compliance cost, should get the permits before those with high compliance costs.
- IPPC installations in sectors, which will benefit from the IPPC permit through better access to EU markets or otherwise, should get permits earlier than others.
- IPPC installations in sectors with high growth potential and good survival prospects should get permits earlier than those, which may be facing bankruptcy or major restructuring.

It should also be taken into account that all installations while they will not have integrated permits still will have the obligation to receive separate permits for the emissions in air water and waste management.

Required investments for food sector (with the exception of large farms) is lower compared to other industrial sectors, and benefits of IPPC permitting for the food sector in particular may include increased accessibility to the EU market, assuming that IPPC compliance will in general contribute to the production quality and competitiveness of the enterprise. It may also be easier for the food sector to attract financing.

As the second group, sectors with growth potential such as textiles, chemicals should be permitted. Though the sectors are in growth, they have not yet fully gone through the transition process, as many of the companies in the industry have still not found their market niches or found strategic investors. They are therefore best permitted after food and wood.

Third, the industries that are most difficult to assess in terms of their viability should be permitted only at a late stage. These industries include metal processing, glass/construction materials, paper mills and pharmaceuticals. Many of these enterprises will go through some major restructuring during the next five years, in some cases resulting in bankruptcy or change of profile.

Finally, the energy sector will be very expensive and will need to follow the requirements of the Large Combustion Plants directive. It is proposed that the energy sector call-in dates are as late as possible. It shall be kept in mind that any IPPC installation including energy can apply at any time. If an energy installation decides to restructure earlier in accordance with the Combustion Plant directive and/or other legal requirements, it can at any time apply for an early IPPC permit as part of the process.

Landfills are also proposed to be late in the process since the number of existing landfills will expectedly close down as part of the strategy for the sector.

1. Introduction

The cost assessments were carried out to provide information needed in the political process of determining the appropriate approximation strategy of the IPPC directive's requirements in Latvia.

A cost assessment [1] has been carried out indicating that the cost of implementing BAT for the existing IPPC installations will be considerable (on the average 1 MLVL or 1,7 MEUR (for each enterprise excluding landfills and energy). Concerning timing of permitting it was recommended that:

- IPPC installations in sectors, which will have relatively low compliance costs, should get the permits before those with high compliance costs.
- IPPC installations in sectors, which will benefit from the IPPC permit through better access to EU markets or otherwise, should get permits earlier than others.
- IPPC installations in sectors with high growth potential and good survival prospects should get permits earlier than those, which may be facing bankruptcy or major restructuring.

A cost assessment [2] was carried out based on rough estimates prepared by the IPPC companies themselves. Companies were asked to fill in specific questionaires taking into account their production strategies and environmental action plans.
16 of 59 existing companies representing different sectors reported that the transitional periods of 1-7 years are needed to be in compliance with BAT.

A cost assesment [3] was carried out in the scope of the EU-Phare project LAT-108. In the case of energy industry the cost of compliance with LCP directive was taken as indicative of the cost of the IPPC compliance. LCP compliance cost has been estimated at 125 MLVL (212 MEUR) for 29 energy installations (some of them later turned out not to be IPPC installations). The cost of compliance with IPPC directive has been estimated at 521 MEUR for 22 existing energy installations.

According to the latest examination, the list of energy installations comprises 22 installations where public (central and local government funded) and commercial projects should be implemented, including projects on reconstruction of boiler houses and heat networks, modernisation of control and management systems.

2. The private investments

The investment needs have to be identified based on the existing BAT Notes at a plant level.
The general complexities in determining of IPPC implementation costs in the IPPC enterprises and in the country were as follows:

- Determination of BAT options for specific sectors and local conditions. Currently only 6 BAT Notes on specific industrial sectors are completed by the IPPC bureau in Sevilla.
- Discussion is going on in EU working group "Economic and cross media issues" on the methodologies used in the EU countries for assessment of environmental actions and measures to reach compliance with BAT and IPPC requirements. As there are no commonly accepted methodologies in the EU, evaluation of BAT options for different media is rather complicate.
- As the IPPC directive covers mainly private sector industries, the dynamics of markets and other related developments largely influence the extent to which IPPC compliance is feasible to the individual industry or branch.

The environmental audits should be carried out for each company to evaluate performance and gaps between existing technics and BAT. Financial and human resources, training and consultancy services are needed to carry out the environmental audits and establish environmental action plans to be in compliance with the IPPC requirements.

The list of IPPC enterprises in Latvia was revised in March 2001. Totally 59 installations are included in the list (Table 1.).

Table 1. Estimated IPPC compliance costs to Latvian industry.

IPPC category	**Number of installations (January, 2001)**	**Costs, MEUR**
1. Energy installations	22	521
2. Production and processing of metal	7	106
3. Mineral industry	5	10
4. Chemical industry	9	8
5. Landfills	5	36
6. Other industries (except farms)	5	15
Farms	6	18
Total	59	714

Energy sector and waste sector is covered by specific programmes:

- National Programme on Energy (energy sector). It is developed for 15 years and is periodically - once per 5 years- updated.
- Programme "500-" includes long term plans in waste sector.

3. Financial analysis

3.1. General assumptions

The analysis indicate that approximation of the IPPC directive in Latvia would necessitate the financing of investments in the order of 193 MEUR in the case of other industry, and in the order of 521 MEUR in the case of the energy sector. This is a substantial requirement - in particular to the private industry.

Analysis carried out in Section 7 of Report [1] shows that the metal industry, on average, has an investment need that is larger than the Latvian average of IPPC industries. The same goes for the minerals sector. Further, this industry, together with the chemical industry, is going through a difficult restructuring period for the moment. Substantial restructuring can be expected during the coming years, and this may involve the closure of some installations. IPPC industries in these sectors may therefore demand external financing to facilitate their IPPC compliance while at the same time facing difficulties in complying with normal loan conditions, and maybe be subject to closures or substantial restructuring in the coming years.

For the energy plants, they have to comply with the directive on LCP, and they are generally in a period of modernisation and upgrading. IPPC issues should be integrated into these initiatives whenever it is relevant.

The study has sought to put these cost estimates into perspective by means of comparing them to among other things indicators of the overall investment level as regards industry, and indicators of the economic status of the IPPC companies. However, the transitional stage that Latvia is undergoing means that one should be very careful to simply project current development patterns to continue in the coming years. The comparisons indicate a huge variety in the relative financial importance of IPPC compliance (when comparing the costs to asset base value, profits or sales). To a few companies IPPC compliance costs constitute only a minor share of these values while it amounts to (much) more than 100% to quite a few other companies.

It therefore was recomended to adapt an approximation strategy that on the one hand speeds up on the path to full compliance while on the other hand ensuring that IPPC compliance does not cause unnecessarily high economic costs. The former implies that companies that *can* initiate the process without substantial negative impacts on the development prospects should be encouraged to do so. The latter on the other hand implies that a strategy should provide the relevant companies with sufficient adjustment time (within the overall time given) in order to avoid unnecessarily high economic cost. At the extreme this may be in the form of company closures *caused by* too strict IPPC requirements as regards the timing. To avoid this the proposed transitional periods are essential

Latvian Environmental Investment Fund (LEIF), and possibly also new and specialised EBRD credit lines, may be important means of supporting the process as such credits can expand the amount of finance available for IPPC approximation purposes.

EU-Phare through ISPA presents a potential source of (limited) financing only in the case of public utilities.

3.2. Supply of finance

Private sector demand

As a general observation, the investments necessary for IPPC compliance would need to be financed on normal loan conditions. The IPPC companies are private companies that produce and sell their goods on market-based conditions, and consequently they would have to finance their IPPC investments through market conditions, e.g. bank loans[1] or out of their own funds.

Financial markets are fairly developed in Latvia. Thus, finance would not constitute a constraint to IPPC compliance per se. However, risk aversion, general transitional features of the economy and the general uncertainty as regards market prospects may render loan conditions fairly strict. For some companies they may be prohibitively strict in the sense that these companies may not be able to comply with the loan conditions offered, or they may not be offered a loan at all.

Means of loosening a possible shortage of supply of finance

In such cases, and in order to ease a possible shortage on the financial market, the Latvian Environmental Investment Fund could have an important role to play in the path towards EU approximation.

The purpose of LEIF is to pool domestic earmarked resources with foreign bilateral and multilateral assistance to support public and private environmental investments. LEIF could be a potentially important vehicle through which a possible EBRD credit line aimed at IPPC investments could be channelled to the potential sponsors. Currently, about 1/3 of support from LEIF goes to the private sector, but this share could be increased in the future. The funds today amount to a total of about 8.5 MLVL, of which 3.5 are Phare funds and 2 are NEFCO funds.

Support in the form of grants and/or very favourable loans with very low interest rates or long maturity do not present significant potential financing sources in regard to IPPC compliance in industry. Firstly, because this would introduce a distortionary mechanism into the competitive features of the markets concerned, and secondly, because such support is only offered to the private sector in quite a limited amount. However, it could be envisaged that certain initiatives could achieve support in cases where the investment would provide a significant demonstration effect vis-à-vis other similar industries in Latvia or elsewhere in EU.

[1] As regards the landfills and the energy plants, these companies are public utilities and they may be eligible for some financial assistance in project design and implementation trough for example bilateral donors and IFI's such as the World Bank and EIB. These installations are not covered here as other studies have considered financial issues and affordability questions in depth for these sectors.

A national economic incentive for IPPC compliance in the form of tax reductions conditioned on IPPC permit could prove to be an important means of accelerating the process of approximation. Such an instrument would however need to be financed, and it would thus depend on whether funds could be made available from the general budget to implement such a scheme.
In the case of public utilities, i.e. landfills and probably also the energy industries, ISPA could be a potential source of financing some of the necessary investments.

3.3. Financing needs

There are some types of companies, and specific companies, that may have more difficulties than others in financing the necessary investments.
The prime reasons for this may relate to the following:

- General shortage of finance in Latvia (supply)
- High risk aversion at financing institutions
- Affordability constraints

As regards the former of the two, the LEIF could have a potentially important role to play - in particular to the extent that Latvian financing institutions are characterised by a critically high risk aversion.
It may be envisaged though that loans provided through LEIF as such or through a possible new EBRD credit line would as a general rule be based on market conditions. The major advantage being that these institutions may be less risk adverse and that the maturity of loans may be extended by some years. In the latter regard it should be noted that the maturity of loans in Latvia does normally not exceed five years, and it is often less than five years. In some cases this need not be a critical constraint, but in cases where the necessary investment is large and with a considerable pay-back period, it may be crucial to have a longer repayment time.
As regard the latter, there may thus be companies to whom IPPC compliance even on normal market conditions would be a problem. It may be inevitable that such companies may cease to operate in the future due to their financial difficulties and/or as a result of unsuccessful restructuring. However, it is essential to ensure, within the given framework, that such companies are given sufficient lead time in their IPPC compliance requirements. In other words, it is essential to identify, to the extent possible (i.e. within the national IPPC compliance scheme), these companies in order to ensure that they are awarded as much time as possible. Thereby, they are given time to complete the necessary restructuring and/or consolidation, and to prepare for the IPPC permit.

Sources of information:

1. IPPC Approximation Assessment of Compliance Cost for Latvia. Final Report. COWI, Project " Project to Assist Latvia in Approximation of EU Law concerning IPPC , COWI, Danish Environmental Protection Agency / Ministry of Environmental Protection and Regional Development of Latvia, January 2000.

2. IPPC cost estimates for Latvian industry. Report. Follow -up Project "Integrated Pilot Permitting in Latvia, Ministry of Environmental Protection and Regional Development of Latvia, January 2001.

3.LCP directive compliance costs. Project LAT-108, Final Report. EU-Phare/ Ministry of Environmental Protection and Regional Development of Latvia, 1999.

4.IPPC Approximation Strategy and Plan for Latvia. Final Report. Project to Assist Latvia in Approximation of EU Law concerning IPPC, COWI, Danish Environmental Protection Agency / Ministry of Environmental Protection and Regional Development of Latvia, May 2000.

5. Economic Development of Latvia. Report. Ministry of Economy of the Republic of Latvia. Riga, December 2000.

Annex 25

Compliance investment costs and transitional periods needed for implementation of IPPC directive's requirements in existing IPPC enterprises in Latvia

(Enterprises, which will need transitional period, are shown in bold)

Table 1.

No	Name of enterprise and main activity/ product	Category according to Annex 1	Costs (th. EUR)	Year of compliance (end of the year)	Need for transition period	Comments
1	2	3	4	5	6	7
1	JSC[2] "Liepājas siltums" (district heating)	1.1.	20000	2006	No	General comments concerning energy sector There are regional strategies and local plans concerning improvement of effectiveness and energy saving matters. Electric energy is produced in two large installations: PAS "Latvenergo" Rīgas TEC-1 and Rīgas TEC-2 Other installations are producing heat.
2	ME[3] "Siguldas siltums" (district heating)	1.1.	1864	2007	No	
3	JSC "Rīgas kuģu būvētava" (heat production for ship repair works)	1.1.	808	2005	No	
4	JSC "Preiļu siers" (heat production for district heating and production of dairy products)	1.1.	2373	2005	No	
5	**ME "Jūrmalas ST",SC " Kauguri"** (district heating)	1.1.	8514	2010	Yes	Capacity 78 MW
6	ME "Jūrmalas ST" , SC "Dubulti" (district heating)	1.1.	508	2007	No	
7	**Ventspils ME "Siltums"** (district heating)	1.1.	6763	2010	Yes	Capacity 100 MW. Plans cessation of the central boiler house and reconstruction of heating system to join to the new heating system after its installation at "Pārventas siltums".
8	**Ventspils Ltd. "Pārventas siltums"** (district heating)	1.1.	203390	2010	Yes	Capacity 198 MW. Plans construction of a new boiler house and reconstruction of existing heating systems.

[2] JSC – joint stock company
[3] ME – municipal enterprise

9	Rēzekne ME "Siltums" (district heating)	1.1.	3729	2006	No	
10	Daugavpils ME " SC- 1" (district heating)	1.1.	4068	2007	No	
11	Daugavpils ME "SC- 2" (district heating)	1.1.	4814	2007	No	
12	Daugavpils ME "SC-3" (district heating)	1.1.	8381	2007	No	
13	Jelgava ME " ST" (district heating)	1.1.	6780	2005	No	
14	Jēkabpils ME "ST" (district heating)	1.1.	4173	2006	No	
15	JSC "Rīgas siltums" SC"Daugavgrīva" (district heating)	1.1.	8475	2007	No	
16	JSC "Rīgas siltums" SC "Ziepniekkalns " (district heating)	1.1.	16949	2007	No	
17	JSC "Rīgas siltums" SC"Vecmilgrāvis" (district heating)	1.1.	16949	2007	No	
18	JSC Rīgas siltums SC "Zasulauks" (district heating)	1.1.	25424	2007	No	
19	JSC "Rīgas siltums", SC "Imanta" (district heating)	1.1.	33898	2007	No	
20	JSC "Latvenergo", SC "Andrejsala" (district heating)	1.1.	8475	2007	No	
21	JSC "Latvenergo" ,Rīgas TEC- 1 (electricity production, district heating)	1.1.	109492	2007	No	
22	**JSC "Latvenergo" ,Rīgas TEC- 2** (electricity production, district heating)	1.1.	25424	2010	Yes	Capacity 1600 MW. Taking into account the investment programme of Latvenergo and the solvency of the population regarding the tariffs, transitional period for TEC-2 is essential.
	TOTAL for category 1.1.		521249			

23	**Liepāja SEZ JSC "Liepājas Metalurgs"** (steel manufacturing)	2.5.a ,1.1.	88680	2008	Yes	The main costs are associated with technology change towards electric arc furnaces (EAF). Additional activities which are planned to be performed by 2008: - several changes in technological processes, such as installation of electric process for steel melting, - installation of monitoring equipment, - solid waste reduction
24	JSC "Rīgas autoelektroaparātu rūpnīca" (electric equipment)	2.6.	2027	2005	No	
25	**JSC "Daugavpils pievadķēžu rūpnīca"** (driving chains factory)	2.6.	4237	2010	Yes	Various technological improvements are planned. Main activity to be finished by 2010 is the installation of two wastewater treatment plants
26	Rēzekne SEZ JSC "Rebir" (electric tools)	2.6.	1041	2005	No	
27	JSC "Latvijas dzelzceļš Daugavpils lokomotīvju depo" (carriage depot and repairs)	2.6.	3453	2002	No	
28	**JSC "Lokomotīve"** (carriage depot and repairs)	2.6.	6425	2009	Yes	Enterprise has developed the environmental action plan. Most of the activities will be finished in 2007-2008. The main activity outstanding until 2009 is the installation of wastewater treatment plant
29	JSC "Kurzemes atslēga" (metal products, including locks, keys etc.)	2.6.	2432	2007	No	
30	JSC "Brocēnu metālu sistēmas" (profiled metal)	3.2.	169	2005	No	
31	JSC "Brocēni" (cement)	3.1.	8219	2006	No	
32	JSC "Būvmateriāli AN" (silica bricks, quicklime, encaustic tile)	3.5.	0	Nov 2007	No	

33	**JSC "Valmieras stikla šķiedra"** (glass fibre)	3.3., 1.1.	1695	2010	Yes	The main reasons for the need for transition period include: - the economic situation of the company will require step-by step approach to invest in improvements, - technological reconstruction for various production lines is planned, including change of the glass melting furnace, reconstruction of boiler house, and various others; - the need to build a local wastewater treatment plant.
34	JSC "Lode" (bricks, roofing tiles)	3.5.	0	2007	No	
35	JSC "Komēta" (matches)	4.1. c	934	Nov 2007	No	
36	JSC "European plastic industry " (plastic goods, products of polystyrene and polyethylene)	4.1..h	0	2001	No	Company considers to be able to fulfil the requirements already now
37	JSC "Baltijas gumijas fabrika" (polymeric footwear, technical rubberware)	4.1.i	1069	Nov 2007	No	
38	Ltd. "Rīgas laku un krāsu rūpnīca" (lacquers, paints)	4.1.j, 1.1.	549	2004	No	
39	JSC "Baltic Color" (lacquers, paints)	4.1.j	368	2004	No	
40	Ltd. "Latbio" (pharmaceuticals)	4.1.j	0	2007	No	
41	JSC "Grindeks" (pharmaceuticals)	4.5.	1356	Nov 2007	No	
42	JSC "Olainfarm" (pharmaceuticals)	4.5.	2983	2005	No	

43	**JSC "Medpro Inc."** (pharmaceuticals)	4.5.	2525	2010	Yes	Activities for improvement of environmental performance are planned to be finished till 2010. The main activities are: - process optimisation, - installation of scrubbers and filters, - installation of wastewater treatment plant, - improvement of solid waste management (recycling, utilisation), - risk reduction: installation of sprinkling systems, alarm system, - installation of monitoring equipment.
44	Riga Landfill	5.3.	26281	2004	No	In solid waste sector an investment programme "500-" has been elaborated. It is planned to establish 12 regional waste landfills, which will meet all EU requirements in waste sector and requirements of the Law on Pollution as well. Programme is financed from foreign (ISPA) and local funds.
45	Liepāja regional waste landfill in Šķēde	5.3.	2542	2003*	No	
46	Ventspils regional waste landfill in Platene	5.3.	2710	2003*	No	
47	Rēzekne waste landfill "Rītiņi"	5.3.	254	2005*	No	
48	Waste landfill "Demene" in Daugavpils district	5.3.	5590	2006*	No	
49	JSC "Ogre" (wool yarn, knitwear, knitted goods)	6.2.	3102	2006	No	
50	JSC "Lauma" (knitted fabric, lingerie)	6.2.,1.1.	2034	Nov 2007	No	
51	JSC "Rital" (leather)	6.3.	2259	Nov 2007	No	
52	**JSC "Jelgavas cukurfabrika"** (sugar refining)	6.4.b. 1.1.	7881	2008	Yes	Main activities to be finished in 2007-2008: - installation of biological wastewater treatment plant, - process optimisation, - improvement of risk management: alarm installation and a special construction against flood.

* At that date the old landfills will be closed and remediated and the new landfill will start working in compliance with all EU requirements.

53	JSC "Liepājas cukurfabrika" (sugar refining)	6.4.b	3339	2007	No	
54	**JSC "Putnu fabrika Ķekava"** (poultry)	6.6. 5.3., 1.1.	4229	2009	Yes	Main and most expensive activity is the improvement of poultry manure storage place.
55	JSC "Balticovo" (eggs, poultry)	6.6.	8749	2006	No	
56	**Ltd."Druvas Unguri"** (pig farm)	6.6.	1695	2010	Yes	
57	**Ltd "Korkalns"** (pig farm)	6.6.	1695	2010	Yes	
58	**Ltd "Grīģis un Ko"** (pig farm)	6.6.	1695	2010	Yes	
59	**Ltd. "Nīckrasti"** (poultry farm)	6.6.	1695	2010	Yes	
	TOTAL for all other categories		193054			
	TOTAL		714303			

The cost assessment for IPPC installations was carried out in 1999-2000 by Danish company COWI. The final report of this assessment is available http://www.varam.gov.lv/EIN/Polution/zinojum/Ezinoj.htm . The Danish project calculated total costs for IPPC enterprises (Except category 1.1.). For further calculations the same method, as described in COWI project, was used for category 1.1 installations as well as the costs for other installations were revised.

LCP, which provide only district heating, do not have any impact on competition.

Table 2.

Information on the distribution of production of the installations where transitional period is required

Company name	Products	Total	Markets
JSC "Liepājas Metalurgs"	Metallurgical production made of low carbon and low-alloyed steel. The steel is made in open -hearth furnaces using scrap process with no oxygen intensification. Main products: rolled metal with different profile made of low carbon steel; general purpose steel wire; wire nails and other. Standards ISO 9002, DIN 4888 implemented.	500,000 tons	87,8 % of production exported to African and, South American countries, 9,7 % to Baltic countries, 0,1 % to CIS, 2,3 % sold in Latvia.
JSC "Daugavpils pievadķēžu rūpnīca"	The main production is manufacturing different kinds of driving chains. The company manufactures driving chains for bicycles, motorcycles, agricultural machinery and other chains for industrial use, automotive chains for Russian cars "Lada", pedals, bicycle bells, children two-wheeled and three-wheeled bicycles, different hardware and tools for own needs as well as ordered by other customers. The manufactured chains are in compliance with the international standard ISO 606-94, except for automotive chains for Russian cars manufactured in compliance with Russian standards. In 1998 the production of driving chains was certified under the international quality management standard ENISO 9001:1994.	6,56 million metres driving chains 460,000 pieces pedals 6, 300 bicycles 60,000 bicycle bells	About 55% of the production is exported to CIS. 45 % of the production is exported to Germany, Italy, Spain, France, Denmark, Poland, Sweden, Austria, Greece, Finland, etc.
JSC "Lokomotīve"	Main activity is carriage and engine repairing works.	According to the contracts with suppliers.	Carriages and engines mostly come from CIS and Baltic countries.
JSC "Valmieras stikla šķiedra"	Production of glass fibre and glass-fibre products The main shareholder is Glasseiden GmbH Oschatz (57.74%) The main production of JSC is as follows: Glass marbles; glass yarns rovings; textured rovings; chopped rovings; warps fabrics (technical; textured; for electrical and thermal insulation); netting; non-wovens (felt; complex materials); High silica glass fibre fabrics, tapes and nettings.	37800 t glass and glass fibre; 8260 tons/31820 m fabrics	97.7% of the produced production was exported to 25 countries: 51.1% European Union 34.1% Eastern Europe 1.1% CIS 11.4% other countries 2.3% of the production is sold in Latvia.

JSC "Medpro.Inc"	Production of active pharmaceutical ingredients (APhI)	70 tons	10 % exported to Germany The remaining 90 % of production is sold in Latvia
JSC Jelgavas cukurfabrika"	Production of sugar and molasses.	40000 tons	Sugar – Latvia, molasses - CIS, Latvia
JSC "Putnu fabrika Ķekava"	Chicken breeding, eggs, finished meat and meat products.	3, 2 million of chicken, 5000 tons finished meat and meat products	Latvia
Ltd. "Druvas Unguri" Ltd."Korkalns" Ltd. "Griģis unKo" Ltd."Nīckrasti"	Pig and poultry farms.	10000 pigs 6000 pigs 4500 pigs 70000 poultry	Latvia
ME "Jūrmalas ST", SC " Kauguri"	District heating	Capacity 78 MW	Latvia, Jūrmala City
Ventspils ME "Siltums"	District heating	Capacity 100 MW	Latvia, Ventspils City
Ventspils Ltd. "Pārventas siltums"	District heating	Capacity 198 MW	Latvia, Ventspils City
JSC "Latvenergo" ,Rīgas TEC- 2	Electricity production, district heating	Capacity 1600 MW	Latvia

Table 3.

Characteristics of installations

Name	**Location of the site**	**Annual emissions (tons) according to the Environmental Report , 2000**
JSC"Liepājas Metalurgs"	in the centre of the City Liepāja, Liepāja - on the eastern coast of the Baltic Sea	SO_2 - 83; NO_x - 1271; Particulates – 661
JSC"Daugavpils pievadķēžu rūpnīca"	2 km from the centre of Daugavpils City, 233 km south - east from Riga, 20 km from the border with Lithuania	CO_2 - 18; NO_x - 0,8
JSC "Lokomotīve"	in the centre of Daugavpils City, 233 km to the southeast from Riga, 20 km from the border with Lithuania	SO_2 - 10; NOx - 52; Particulates – 16
JSC "Valmieras stikla šķiedra"	2 km from the centre of Valmiera City, 106 km to the northeast from Riga, 55 km from the border with Estonia	SO_2 - 212 ; NO_x - 20; CO - 68; Particulates - 5
JSC "MedproInc"	in the centre of Riga City	SO_2 - no emissions ; NO_x - no emissions
JSC "Putnu fabrika Ķekava"	15 km to the south from Riga, 80 km from the border with Lithuania	CO - 46; NO_x - 18
JSC "Jelgavas cukurfabrika"	47 km to the south west from Riga, 55 km from te border with Lithuania	currently not available
4 farms: "Druvas Unguri", "Korkalns", "Griģis un Ko", "Nīkrāce"	in the southwestern part of Latvia, located in different places in the Liepāja region, about 20 to 100 km from Liepāja, 30-60 km from the border with Lithuania	SO_2 - no emissions ; NOx - 0.2 to 0,5; CO - 0,8-1
ME "Jūrmalas ST", SC " Kauguri"	28 km to the west from Riga	NOx - 47; CO – 129
Ventspils ME "Siltums"	in the centre of Ventspils City, 184 km to the north-west from Riga on the coast of the Baltic Sea	SO_2 - 524; NOx – 35; CO - 181; Particulates – 81
Ventspils Ltd. "Pārventas siltums"	in the centre of Ventspils City, 184 km to the north-west from Riga on the coast of the Baltic Sea	SO_2 - 975; NOx – 60; CO 94; Particulates – 8
JSC "Latvenergo" Riga TEC-2	7,5 km to the southeast of Riga City centre (Riga - the south point of the Gulf of Riga)	SO_2 - 887; NO_x - 1616; Particulates – 25

Table 4.

Analysis for the necessary investments for TEC-2. The necessary investments are covering the design, installation, consulting and training costs.

Environmental action	Estimated pay-back period,* years	Foreseen benefits
Raw material, water, energy savings		
Steam boilers modernisation by installing SIEMENS automated control system, including:	14	• Improves the efficiency by 2% • reduces emission by 2%
continuous monitoring of flue gas composition on each boiler (65,550 Ls)		• makes it possible to identify and minimise incineration disturbances
Minimisation of leakages in the air pre-heaters (for each boiler)	5	• reduction of the false air suction by 10% increases boiler efficiency by 0.36%
Installation of "Voith" gears (hydro gears)	3	• Reduces boilers circulation and district heating pump's self consumption of electricity by 2 times
Using MgO as an additive to heavy fuel oil	- 1.2 1.2	• Prevents corrosion of the boilers heating surfaces, • Improves fuel economy by 2% • Reduces acidity of the polluted particulate
Improvements in the condensate collecting systems as to ensure the operation in the winter period	2	• 25% condensate saving
Technological and operational changes		
Installing automated Pentomag dosing system into HFO	**	• Improves dosing accuracy
Installation of continuous emission control system on the stack	**	• Defines true emission level on the stack and in compliance with EU legislation • Gives actual dates for taxes
Increased use of natural gas as fuel	**	• Excludes emissions of SO_2 and particulate, minimises NO_x emissions

Environmental action	Estimated pay-back period,* years	Foreseen benefits
Air pollution control Flue gas recirculation	28	• reduces NO_x emission by 60% • reduces impact on environment • compliance with EU directive
Low NO_x burners	83	• reduces NO_x emission by 70% • reduces impact on environment • compliance with EU directive
SNCR (selective non-catalytic NO_x reduction)	>100	• reduces NO_x emission by 50% • reduces impact on environment • compliance with EU directive
Flue gas desulphurisation (wet limestone method)	scene 2 >400 scene 3 >200	• reduces SO_2 emission by 90% • reduces impact on environment • compliance with EU directive
Dust removal - electrostatic precipitators	scene 2 >1000 scene 3 >500	• reduces particulate emission by 99% • reduces impact on environment • compliance with EU directive
Wastewater treatment Minimisation of the amount of intruding groundwater into the oil contaminated wastewater system	3	• decreases the load on the treatment plant for oil contaminated wastewater by 25%
Risks prevention Safe storage of hydrazine: • reconstruction of ventilation system.	**	• improved health and safety
• automated hydrazine and storage and handling system	**	• environment protection

Environmental action	Estimated pay-back period,* years	Foreseen benefits
Risks control Installation of oil monitoring system with an alarm feature at the outlet to wastewater collector of external company for prevention of soil and groundwater contamination	**	• compliance with EU legislation • compliance with environment protection
Solid waste handling Inspection of monitoring wells around the sludge disposal ponds on heavy metals and oil	**	• compliance with EU groundwater directive
Occupational health and safety Installation of "safety showers" at potentially dangerous areas	**	• improved health and safety

Total compliance investment costs: 25,424,000 EUR

Notes to table:

* in pay-back period calculation (except SIEMENS project) only environmental aspects are taken into account;

** not calculated due to lack of information an scope of savings.