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31. **Zakon o ratifikaciji Protokola 1996 h Konvenciji o preprečevanju onesnaženja morja z odpadnimi in drugimi snovmi, 1972 (M96KPOM)**

Na podlagi druge alinee prvega odstavka 107. člena in prvega odstavka 91. člena Ustave Republike Slovenije izdajam

U K A Z
O RAZGLASITVI ZAKONA O RATIFIKACIJI PROTOKOLA 1996 H KONVENCIJI O PREPREČEVANJU ONESNAŽENJA MORJA Z ODPADNIMI IN DRUGIMI SNOVMI, 1972 (M96KPOM)

Razglašam Zakon o ratifikaciji Protokola 1996 h Konvenciji o preprečevanju onesnaženja morja z odpadnimi in drugimi snovmi, 1972 (M96KPOM), ki ga je sprejel Državni zbor Republike Slovenije na seji 21. junija 2005.

Št. 001-22-43/05
Ljubljana, 29. junija 2005

dr. Janez Drnovšek l. r.
Predsednik
Republike Slovenije

Z A K O N
O RATIFIKACIJI PROTOKOLA 1996 H KONVENCIJI O PREPREČEVANJU ONESNAŽENJA MORJA Z ODPADNIMI IN DRUGIMI SNOVMI, 1972 (M96KPOM)

1. člen

Ratificira se Protokol 1996 h Konvenciji o preprečevanju onesnaženja morja z odpadnimi in drugimi snovmi, 1972, sestavljen 7. novembra 1996 v Londonu.

2. člen

Besedilo protokola se v izvirniku v angleškem jeziku ter prevodu v slovenskem jeziku glasi:*

1996 P R O T O C O L
TO THE CONVENTION ON THE PREVENTION OF MARINE POLLUTION BY DUMPING OF WASTES AND OTHER MATTER, 1972

THE CONTRACTING PARTIES TO THIS PROTOCOL,

STRESSING the need to protect the marine environment and to promote the sustainable use and conservation of marine resources,

NOTING in this regard the achievements within the framework of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 and especially the evolution towards approaches based on precaution and prevention,

NOTING FURTHER the contribution in this regard by complementary regional and national instruments which aim to protect the marine environment and which take account of specific circumstances and needs of those regions and States,

P R O T O K O L 1996
H KONVENCIJI O PREPREČEVANJU ONESNAŽENJA MORJA Z ODPADNIMI IN DRUGIMI SNOVMI, 1972

POGODBENICE TEGA PROTOKOLA,

KI POUDARJAJO potrebo po varovanju morskega okolja in spodbujanju trajnostne rabe ter ohranjanja morskih virov,

KI V TEM POGLEDU UGOTAVLJAJO dosežke na podlagi Konvencije o preprečevanju onesnaženja morja z odpadnimi in drugimi snovmi, 1972, predvsem pa oblikovanje pristopov, ki temeljijo na previdnosti in preprečevanju,

KI V TEM POGLEDU NADALJE UGOTAVLJAJO pomen dopolnilnih regionalnih in državnih dokumentov, namenjenih varovanju morskega okolja, ki upoštevajo posebne okoliščine in potrebe teh območij ter držav,

* Besedilo protokola v arabskem, francoskem, kitajskem, ruskem in španskem jeziku je na vpogled v Sektorju za mednarodno pravo Ministrstva za zunanje zadeve.

REAFFIRMING the value of a global approach to these matters and in particular the importance of continuing co-operation and collaboration between Contracting Parties in implementing the Convention and the Protocol,

RECOGNIZING that it may be desirable to adopt, on a national or regional level, more stringent measures with respect to prevention and elimination of pollution of the marine environment from dumping at sea than are provided for in international conventions or other types of agreements with a global scope,

TAKING INTO ACCOUNT relevant international agreements and actions, especially the United Nations Convention on the Law of the Sea, 1982, the Rio Declaration on Environment and Development and Agenda 21,

RECOGNIZING ALSO the interests and capacities of developing States and in particular small island developing States,

BEING CONVINCED that further international action to prevent, reduce and where practicable eliminate pollution of the sea caused by dumping can and must be taken without delay to protect and preserve the marine environment and to manage human activities in such a manner that the marine ecosystem will continue to sustain the legitimate uses of the sea and will continue to meet the needs of present and future generations,

HAVE AGREED as follows:

ARTICLE 1

DEFINITIONS

For the purposes of this Protocol:

1 "Convention" means the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended.

2 "Organization" means the International Maritime Organization.

3 "Secretary-General" means the Secretary-General of the Organization.

4 .1 "Dumping" means:
- .1 any deliberate disposal into the sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea;
- .2 any deliberate disposal into the sea of vessels, aircraft, platforms or other man-made structures at sea;
- .3 any storage of wastes or other matter in the seabed and the subsoil thereof from vessels, aircraft, platforms or other man-made structures at sea; and
- .4 any abandonment or toppling at site of platforms or other man-made structures at sea, for the sole purpose of deliberate disposal.

.2 "Dumping" does not include:
- .1 the disposal into the sea of wastes or other matter incidental to, or derived from the normal operations of vessels, aircraft, platforms or other man-made structures at sea and their equipment, other than wastes or other matter transported by or to vessels, aircraft, platforms or other man-made structures at sea, operating for the purpose of disposal of such matter or derived from the treatment of such wastes or other matter on such vessels, aircraft, platforms or other man-made structures;
- .2 placement of matter for a purpose other than the mere disposal thereof, provided that such placement is not contrary to the aims of this Protocol; and

KI PONOVNO POTRJUJEJO pomen globalnega pristopa k tem vprašanjem in predvsem pomembnost nenehnega sodelovanja med pogodbenicami pri izvajanju konvencije in protokola,

KI OB SPOZNANJU, da bi bilo zaželeno, da bi bili na državni ali regionalni ravni sprejeti taki ukrepi za preprečevanje in odpravljanje onesnaževanja morskega okolja z odmetavanjem v morje, ki so strožji od tistih, ki jih predvidevajo mednarodne konvencije ali druge vrste sporazumov v svetovnem merilu,

KI UPOŠTEVAJO ustrezne mednarodne sporazume in ukrepe, predvsem Konvencijo Združenih narodov o pomorskem mednarodnem pravu, 1982, Deklaracijo iz Ria o okolju in razvoju ter Agendo 21,

KI PRIZNAVAJO tudi interese in zmožnosti držav v razvoju in predvsem majhnih otoških držav v razvoju

IN KER SO PREPRIČANE, da se nadaljnji mednarodni ukrepi za preprečevanje, zmanjševanje, in če je to izvedljivo, odpravljanje onesnaževanja morja, ki ga povzroča odmetavanje odpadnih in drugih snovi, lahko in morajo nemudoma sprejeti, da se bo zavarovalo in ohranilo morsko okolje, človekove dejavnosti pa se opravljale na tak način, da bo morski ekosistem lahko tudi v prihodnje prenesel dovoljene vrste rabe morja in da bo lahko zadovoljeval potrebe sedanjih in prihodnjih generacij,

SO SE SPORAZUMELE, kot sledi:

1. ČLEN

OPREDELITEV IZRAZOV

V tem protokolu:

1 »Konvencija« pomeni Konvencijo o preprečevanju onesnaženja morja z odpadnimi in drugimi snovmi, 1972, s spremembami.

2 »Organizacija« pomeni Mednarodno pomorsko organizacijo.

3 »Generalni sekretar«pomeni generalnega sekretarja organizacije.

4. .1 »Odmetavanje« pomeni:
- .1 vsakršno namerno odlaganje odpadkov ali drugih snovi z ladij, letal, ploščadi ali drugih umetnih konstrukcij na morju v morje;
- .2 vsakršno namerno odlaganje ladij, letal, ploščadi ali drugih umetnih konstrukcij na morju v morje;
- .3 vsakršno shranjevanje odpadkov ali drugih snovi na morskem dnu ali v podzemlju z ladij, letal, ploščadi ali drugih umetnih konstrukcij na morju in
- .4 vsakršno puščanje ali kopičenje snovi na območju ploščadi ali umetnih konstrukcij na morju samo zaradi namernega odlaganja.

.2 »Odmetavanje« ne vključuje:
- .1 odlaganja odpadkov ali drugih snovi, ki spadajo k običajnemu opravljanju dejavnosti na ladjah, letalih, ploščadih ali drugih umetnih konstrukcijah na morju in njihovi opremi ali izhajajo iz teh dejavnosti, v morje, razen odpadkov ali drugih snovi, ki jih ladje, letala, ploščadi ali druge umetne konstrukcije na morju prevažajo z namenom, da bi te snovi odložili, ali izhajajo iz obdelave takih odpadkov ali drugih snovi na ladjah, letalih, ploščadih ali drugih umetnih konstrukcijah;
- .2 puščanje snovi z drugim namenom, kot je samo odlaganje teh snovi, če to ni v nasprotju s cilji tega protokola, in

.3 notwithstanding paragraph 4.1.4, abandonment in the sea of matter (eg, cables, pipelines and marine research devices) placed for a purpose other than the mere disposal thereof.

.3 The disposal or storage of wastes or other matter directly arising from, or related to the exploration, exploitation and associated off-shore processing of seabed mineral resources is not covered by the provisions of this Protocol.

5 .1 "Incineration at sea" means the combustion on board a vessel, platform or other man-made structure at sea of wastes or other matter for the purpose of their deliberate disposal by thermal destruction.

.2 "Incineration at sea" does not include the incineration of wastes or other matter on board a vessel, platform, or other man-made structure at sea if such wastes or other matter were generated during the normal operation of that vessel, platform or other man-made structure at sea.

6 "Vessels and aircraft" means waterborne or airborne craft of any type whatsoever. This expression includes air-cushioned craft and floating craft, whether self-propelled or not.

7 "Sea" means all marine waters other than the internal waters of States, as well as the seabed and the subsoil thereof; it does not include sub-seabed repositories accessed only from land.

8 "Wastes or other matter" means material and substance of any kind, form or description.

9 "Permit" means permission granted in advance and in accordance with relevant measures adopted pursuant to Article 4.1.2 or 8.2.

10 "Pollution" means the introduction, directly or indirectly, by human activity, of wastes or other matter into the sea which results or is likely to result in such deleterious effects as harm to living resources and marine ecosystems, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.

ARTICLE 2

OBJECTIVES

Contracting Parties shall individually and collectively protect and preserve the marine environment from all sources of pollution and take effective measures, according to their scientific, technical and economic capabilities, to prevent, reduce and where practicable eliminate pollution caused by dumping or incineration at sea of wastes or other matter. Where appropriate, they shall harmonize their policies in this regard.

ARTICLE 3

GENERAL OBLIGATIONS

1 In implementing this Protocol, Contracting Parties shall apply a precautionary approach to environmental protection from dumping of wastes or other matter whereby appropriate preventative measures are taken when there is reason to believe that wastes or other matter introduced into the marine environment are likely to cause harm even when there is no conclusive evidence to prove a causal relation between inputs and their effects.

.3 ne glede na 4. točko prvega pododstavka četrtega odstavka izraz ne vključuje puščanja v morju stvari (npr. kablov, cevovodov in naprav za raziskovanje morja), ki so tam z drugim namenom, kot je samo odlaganje teh stvari.

.3 Določbe tega protokola ne zajemajo odlaganja odpadkov ali drugih snovi, ki izhajajo neposredno iz iskanja in izkoriščanja virov nafte in plina na morskem dnu, in s tem povezanega predelovanja na morju.

5 .1 »Sežiganje na morju« pomeni zgorevanje odpadkov ali drugih snovi na ladji, ploščadi ali drugi umetni konstrukciji na morju zaradi njihove namerne odstranitve s toplotnim uničenjem.

.2 »Sežiganje na morju« ne vključuje sežiganja odpadkov ali drugih snovi na ladji, ploščadi ali drugi umetni konstrukciji na morju, če so ti odpadki ali druge snovi nastali med običajnim opravljanjem dejavnosti na tej ladji, ploščadi ali drugi umetni konstrukciji na morju.

6 »Ladje in letala« pomeni kakršna koli vodna ali zračna plovila. Izraz vključuje tudi plovila na zračni blazini in plavajoče naprave, pa naj bodo na lastni pogon ali brez njega.

7 »Morje« pomeni vse morske vode, razen notranjih morskih voda držav, morsko dno in njegovo podzemlje, ne vključuje pa geoloških usedlin pod morskim dnom, do katerih je dostop mogoč samo s kopnega.

8 »Odpadki ali druge snovi« pomeni material in sestavine ne glede na vrsto, obliko ali opis.

9 »Dovoljenje« pomeni dovolilnico, izdano vnaprej in v skladu z ustreznimi ukrepi, sprejetimi na podlagi drugega pododstavka prvega odstavka 4. člena in drugega odstavka 8. člena.

10 »Onesnaževanje« pomeni neposreden ali posreden vnos odpadkov ali drugih snovi v morje zaradi človekove dejavnosti, ki ima ali lahko ima za posledico škodljive učinke, ki prizadenejo žive morske vire in ekosisteme, ogrožajo človekovo zdravje, ovirajo dejavnosti na morju, vključno z ribolovom in drugimi zakonitimi vrstami uporabe morja, vplivajo na poslabšanje kakovosti morske vode za uporabo in na zmanjšanje uživanja okolja.

2. ČLEN

CILJI

Pogodbenice posamezno in skupaj ohranjajo in varujejo morsko okolje pred vsemi viri onesnaževanja in v skladu s svojimi znanstvenimi, strokovnimi in gospodarskimi zmožnostmi sprejemajo učinkovite ukrepe za preprečevanje, zmanjševanje, in kadar je izvedljivo, odpravljanje onesnaževanja, povzročenega z odmetavanjem odpadkov ali drugih snovi v morje ali njihovim sežiganjem na morju. Če je to ustrezno, med seboj usklajujejo svoje usmeritve na tem področju.

3. ČLEN

SPLOŠNE OBVEZNOSTI

1 Pri izvajanju tega protokola pogodbenice uporabljajo previdnostni pristop k varstvu okolja pred odmetavanjem odpadkov ali drugih snovi, pri čemer izvajajo ustrezne preprečitvene ukrepe, če obstaja utemeljen razlog za sum, da lahko odpadki ali druge snovi, vnesene v morsko okolje, povzročijo škodo, čeprav ni prepričljivih dokazov o vzročni zvezi med vnosi in njihovimi učinki.

2 Taking into account the approach that the polluter should, in principle, bear the cost of pollution, each Contracting Party shall endeavour to promote practices whereby those it has authorized to engage in dumping or incineration at sea bear the cost of meeting the pollution prevention and control requirements for the authorized activities, having due regard to the public interest.

3 In implementing the provisions of this Protocol, Contracting Parties shall act so as not to transfer, directly or indirectly, damage or likelihood of damage from one part of the environment to another or transform one type of pollution into another.

4 No provision of this Protocol shall be interpreted as preventing Contracting Parties from taking, individually or jointly, more stringent measures in accordance with international law with respect to the prevention, reduction and where practicable elimination of pollution.

ARTICLE 4

DUMPING OF WASTES OR OTHER MATTER

1 .1 Contracting Parties shall prohibit the dumping of any wastes or other matter with the exception of those listed in Annex 1.

.2 The dumping of wastes or other matter listed in Annex 1 shall require a permit. Contracting Parties shall adopt administrative or legislative measures to ensure that issuance of permits and permit conditions comply with provisions of Annex 2. Particular attention shall be paid to opportunities to avoid dumping in favour of environmentally preferable alternatives.

2 No provision of this Protocol shall be interpreted as preventing a Contracting Party from prohibiting, insofar as that Contracting Party is concerned, the dumping of wastes or other matter mentioned in Annex 1. That Contracting Party shall notify the Organization of such measures.

ARTICLE 5

INCINERATION AT SEA

Contracting Parties shall prohibit incineration at sea of wastes or other matter.

ARTICLE 6

EXPORT OF WASTES OR OTHER MATTER

Contracting Parties shall not allow the export of wastes or other matter to other countries for dumping or incineration at sea.

ARTICLE 7

INTERNAL WATERS

1 Notwithstanding any other provision of this Protocol, this Protocol shall relate to internal waters only to the extent provided for in paragraphs 2 and 3.

2 Each Contracting Party shall at its discretion either apply the provisions of this Protocol or adopt other effective permitting and regulatory measures to control the deliberate disposal of wastes or other matter in marine internal waters where such disposal would be "dumping" or "incineration at sea" within the meaning of Article 1, if conducted at sea.

3 Each Contracting Party should provide the Organization with information on legislation and institutional mechanisms regarding implementation, compliance and enforcement in marine internal waters. Contracting Parties should also use their best efforts to provide on a voluntary basis summary reports on the type and nature of the materials dumped in marine internal waters.

2 Ob upoštevanju, naj onesnaževalec načeloma krije stroške onesnaževanja, si vsaka pogodbenica prizadeva spodbujati postopke, po katerih tisti, ki jim je dovolila izvajati odmetavanje ali sežiganje na morju, krijejo stroške izpolnjevanja zahtev po preprečevanju onesnaževanja in nadziranju dovoljenih dejavnosti ob upoštevanju javnega interesa.

3 Pri izvajanju določb tega protokola pogodbenice ravnajo tako, da neposredno ali posredno ne prenašajo škode ali verjetne škode z enega dela okolja na drugega ali ne spreminjajo ene vrsto onesnaževanja v drugo.

4 Nobena določba tega protokola se ne razlaga tako, da pogodbenicam preprečuje, da bi posamezno ali skupaj v skladu z mednarodnim pravom sprejele strožje ukrepe za preprečevanje, zmanjševanje, in če je to izvedljivo, odpravljanje onesnaževanja.

4. ČLEN

ODMETAVANJE ODPADKOV ALI DRUGIH SNOVI

1 .1 Pogodbenice prepovedujejo odmetavanje kakršnih koli odpadkov ali drugih snovi, razen tistih, naštetih v prilogi 1.

.2 Za odmetavanje odpadkov ali drugih snovi, naštetih v prilogi 1, je potrebno dovoljenje. Pogodbenice sprejmejo upravne ali zakonodajne ukrepe, s katerimi zagotavljajo, da so izdaja dovoljenj in pogoji iz dovoljenja v skladu z določbami priloge 2. Posebna pozornost se mora namenjati možnostim za izogibanje odmetavanja v korist okolju prijaznih drugih možnosti.

2 Nobena določba tega protokola se ne razlaga tako, da posamezni pogodbenici preprečuje, da bi prepovedala odmetavanje odpadkov ali drugih snovi, omenjenih v prilogi 1. Ta pogodbenica organizacijo uradno obvesti o takih ukrepih.

5. ČLEN

SEŽIGANJE NA MORJU

Pogodbenice prepovejo sežiganje odpadkov ali drugih snovi na morju.

6. ČLEN

IZVOZ ODPADKOV ALI DRUGIH SNOVI

Pogodbenice ne dovoljujejo, da bi se odpadki ali druge snovi izvažale v druge države zaradi odmetavanja ali sežiganja na morju.

7. ČLEN

NOTRANJE MORSKE VODE

1 Ne glede na vse druge določbe tega protokola se ta protokol nanaša na notranje morske vode samo v obsegu, določenem v drugem in tretjem odstavku.

2 Vsaka pogodbenica po lastnem preudarku uporablja določbe tega protokola, sprejme druge učinkovite dopustne in urejevalne ukrepe za nadzor namernega odlaganja odpadkov ali drugih snovi v notranje morske vode, če bi tako odlaganje, opravljeno na morju, pomenilo »odmetavanje« ali »sežiganje na morju«v pomenu 1. člena.

3 Vsaka pogodbenica zagotavlja organizaciji informacije o zakonodaji in institucionalnih mehanizmih za izvajanje, skladnost in uveljavitev v notranjih morskih vodah. Pogodbenice si morajo poleg tega kar najbolj prizadevati za prostovoljno zagotavljanje zbirnih poročil o vrstah in lastnostih snovi, odvrženih v notranje morske vode.

ARTICLE 8

EXCEPTIONS

1 The provisions of Articles 4.1 and 5 shall not apply when it is necessary to secure the safety of human life or of vessels, aircraft, platforms or other man-made structures at sea in cases of *force majeure* caused by stress of weather, or in any case which constitutes a danger to human life or a real threat to vessels, aircraft, platforms or other man-made structures at sea, if dumping appears to be the only way of averting the threat and if there is every probability that the damage consequent upon such dumping will be less than would otherwise occur. Such dumping shall be conducted so as to minimize the likelihood of damage to human or marine life and shall be reported forthwith to the Organization.

2 A Contracting Party may issue a permit as an exception to Articles 4.1 and 5, in emergencies posing an unacceptable threat to human health, safety, or the marine environment and admitting of no other feasible solution. Before doing so the Contracting Party shall consult any other country or countries that are likely to be affected and the Organization which, after consulting other Contracting Parties, and competent international organizations as appropriate, shall, in accordance with Article 18.6 promptly recommend to the Contracting Party the most appropriate procedures to adopt. The Contracting Party shall follow these recommendations to the maximum extent feasible consistent with the time within which action must be taken and with the general obligation to avoid damage to the marine environment and shall inform the Organization of the action it takes. The Contracting Parties pledge themselves to assist one another in such situations.

3 Any Contracting Party may waive its rights under paragraph 2 at the time of, or subsequent to ratification of, or accession to this Protocol.

8. ČLEN

IZJEME

1 Določbe prvega odstavka 4. člena in 5. člena se ne uporabljajo, če je treba zagotoviti varnost človeškega življenja ali ladij, letal, ploščadi ali drugih umetnih konstrukcij na morju ob višji sili, ki jo povzročijo neurja, ali, ko je ogroženo človeško življenje ali je resnično ogrožena varnost ladij, letal, ploščadi ali drugih umetnih konstrukcij na morju, če je odmetavanje ali sežiganje na morju videti kot edini način, da se prepreči nevarnost, in če je verjetno, da bo škoda zaradi takega odmetavanja ali sežiganja na morju manjša, kot bi sicer bila. Odmetavanje ali sežiganje na morju se opravi tako, da je verjetnost ogrožanja človeškega življenja ali življenja v morju čim manjša, kar je treba takoj sporočiti organizaciji.

2 Pogodbenica lahko izda dovoljenje ne glede na prvi odstavek 4. člena in 5. člen v izrednih razmerah, ki pomenijo nesprejemljivo grožnjo zdravju ljudi, varnosti ali morskemu okolju in ne dopuščajo nobene druge izvedljive rešitve. Preden to stori, se pogodbenica posvetuje z drugo državo ali drugimi državami, ki so verjetno zaradi tega prizadete, in z organizacijo, ki pogodbenici v skladu s šestim odstavkom 18. člena, potem ko se je posvetovala z drugimi pogodbenicami in po potrebi tudi s pristojnimi mednarodnimi organizacijami, nemudoma priporoči najustreznejše postopke. Pogodbenica ta priporočila upošteva, če je to izvedljivo glede na čas, v katerem mora ukrepati, in glede na izpolnjevanje splošne obveznosti, da ne škoduje morskemu okolju, in organizacijo obvesti o svojem ukrepanju. Pogodbenice se zavezujejo, da si bodo v takih razmerah pomagale.

3 Vsaka pogodbenica se lahko odpove svojim pravicam po drugem odstavku ob ratifikaciji tega protokola ali pristopu k njemu oziroma po ratifikaciji tega protokola ali pristopu k njemu.

ARTICLE 9

ISSUANCE OF PERMITS AND REPORTING

1 Each Contracting Party shall designate an appropriate authority or authorities to:
.1 issue permits in accordance with this Protocol;
.2 keep records of the nature and quantities of all wastes or other matter for which dumping permits have been issued and where practicable the quantities actually dumped and the location, time and method of dumping; and
.3 monitor individually, or in collaboration with other Contracting Parties and competent international organizations, the condition of the sea for the purposes of this Protocol.

2 The appropriate authority or authorities of a Contracting Party shall issue permits in accordance with this Protocol in respect of wastes or other matter intended for dumping or, as provided for in Article 8.2, incineration at sea:
.1 loaded in its territory; and
.2 loaded onto a vessel or aircraft registered in its territory or flying its flag, when the loading occurs in the territory of a State not a Contracting Party to this Protocol.

3 In issuing permits, the appropriate authority or authorities shall comply with the requirements of Article 4, together with such additional criteria, measures and requirements as they may consider relevant.

9. ČLEN

IZDAJANJE DOVOLJENJ IN POROČANJE

1 Vsaka pogodbenica imenuje ustrezen organ ali ustrezne organe, ki
.1 izdajajo dovoljenja v skladu s tem protokolom;
.2 vodijo evidenco o vrstah in količinah vseh odpadkov ali drugih snovi, za katere so bila izdana dovoljenja za odmetavanje, in če je to izvedljivo, o dejansko odmetanih količinah in kraju, času in načinu odmetavanja ter
.3 posamezno ali skupaj z drugimi pogodbenicami in pristojnimi mednarodnimi organizacijami spremljajo stanje morja za izvajanje tega protokola.

2 Ustrezni organ ali organi pogodbenice v skladu s tem protokolom izdajajo dovoljenja za tiste odpadke ali druge snovi, namenjene odmetavanju, ali kot to predvideva drugi odstavek 8. člena, sežiganju na morju, ki so:
.1 natovorjeni na njenem ozemlju in
.2 natovorjeni na ladjo ali letalo, ki je registrirano na njenem ozemlju ali plove ali leti pod njeno zastavo, če poteka natovarjanje na ozemlju države, ki ni pogodbenica tega protokola.

3 Ob izdaji dovoljenj pristojni organ ali organi ravnajo v skladu z zahtevami 4. člena, skupaj z dodatnimi merili, ukrepi in pogoji, ki se jim zdijo ustrezni.

4 Each Contracting Party, directly or through a secretariat established under a regional agreement, shall report to the Organization and where appropriate to other Contracting Parties:
.1 the information specified in paragraphs 1.2 and 1.3;
.2 the administrative and legislative measures taken to implement the provisions of this Protocol, including a summary of enforcement measures; and
.3 the effectiveness of the measures referred to in paragraph 4.2 and any problems encountered in their application.
The information referred to in paragraphs 1.2 and 1.3 shall be submitted on an annual basis. The information referred to in paragraphs 4.2 and 4.3 shall be submitted on a regular basis.

5 Reports submitted under paragraphs 4.2 and 4.3 shall be evaluated by an appropriate subsidiary body as determined by the Meeting of Contracting Parties. This body will report its conclusions to an appropriate Meeting or Special Meeting of Contracting Parties.

ARTICLE 10

APPLICATION AND ENFORCEMENT

1 Each Contracting Party shall apply the measures required to implement this Protocol to all:
.1 vessels and aircraft registered in its territory or flying its flag;
.2 vessels and aircraft loading in its territory the wastes or other matter which are to be dumped or incinerated at sea; and
.3 vessels, aircraft and platforms or other man-made structures believed to be engaged in dumping or incineration at sea in areas within which it is entitled to exercise jurisdiction in accordance with international law.

2 Each Contracting Party shall take appropriate measures in accordance with international law to prevent and if necessary punish acts contrary to the provisions of this Protocol.

3 Contracting Parties agree to cooperate in the development of procedures for the effective application of this Protocol in areas beyond the jurisdiction of any State, including procedures for the reporting of vessels and aircraft observed dumping or incinerating at sea in contravention of this Protocol.

4 This Protocol shall not apply to those vessels and aircraft entitled to sovereign immunity under international law. However, each Contracting Party shall ensure by the adoption of appropriate measures that such vessels and aircraft owned or operated by it act in a manner consistent with the object and purpose of this Protocol and shall inform the Organization accordingly.

5 A State may, at the time it expresses its consent to be bound by this Protocol, or at any time thereafter, declare that it shall apply the provisions of this Protocol to its vessels and aircraft referred to in paragraph 4, recognising that only that State may enforce those provisions against such vessels and aircraft.

ARTICLE 11

COMPLIANCE PROCEDURES

1 No later than two years after the entry into force of this Protocol, the Meeting of Contracting Parties shall establish those procedures and mechanisms necessary to assess and promote compliance with this Protocol. Such procedures and mechanisms shall be developed with a view to allowing for the full and open exchange of information, in a constructive manner.

4 Vsaka pogodbenica neposredno ali prek sekretariata, ustanovljenega na podlagi regionalnega sporazuma, poroča organizaciji in po potrebi drugim pogodbenicam o:
.1 podatkih, navedenih v drugem in tretjem odstavku 1. člena;
.2 upravnih in zakonodajnih ukrepih, sprejetih za izvajanje določb tega protokola, vključno s pregledom ukrepov za uveljavitev, in o
.3 učinkovitosti ukrepov, iz drugega odstavka 4. člena in o težavah, s katerimi se srečuje pri izvajanju teh ukrepov.
Informacije iz drugega in tretjega pododstavka prvega odstavka se pošiljajo vsako leto. Informacije, iz drugega in tretjega pododstavka četrtega odstavka se pošiljajo redno.

5 Poročila, poslana na podlagi drugega in tretjega pododstavka četrtega odstavka ovrednoti ustrezen pomožni organ, imenovan na zasedanju pogodbenic. Ta organ poroča o svojih ugotovitvah na ustreznem zasedanju ali posebej sklicanem zasedanju pogodbenic.

10. ČLEN

UPORABA IN UVELJAVITEV

1 Vsaka pogodbenica uporablja ukrepe, potrebne za izvajanje tega protokola, za vse:
.1 ladje in letala, ki so registrirani na njenem ozemlju ali plovejo ali letijo pod njeno zastavo;
.2 ladje in letala, ki na njenem ozemlju natovarjajo odpadke ali druge snovi, namenjene odmetavanju ali sežiganju na morju, in
.3 ladje, letala in ploščadi ali druge umetne konstrukcije, za katere se domneva, da se ukvarjajo z odmetavanjem ali sežiganjem na morju na območjih, na katerih ima pravico uresničevati svojo pristojnost v skladu z mednarodnim pravom.

2 Vsaka pogodbenica v skladu z mednarodnim pravom sprejme ustrezne ukrepe, da prepreči in po potrebi kaznuje dejanja, ki so v nasprotju z določbami tega protokola.

3 Pogodbenice soglašajo, da bodo sodelovale pri pripravi postopkov za učinkovito uporabo tega protokola na območjih, ki so zunaj pristojnosti katere koli države, vključno s postopki za prijavljanje ladij in letal, za katere se ugotovi, da odpadke odmetavajo ali sežigajo na morju v nasprotju z določbami tega protokola.

4 Ta protokol se ne nanaša na tiste ladje in letala, ki uživajo državno imuniteto po mednarodnem pravu. Vsaka pogodbenica pa si s sprejetjem ustreznih ukrepov prizadeva, da bodo ladje in letala, ki so v njeni lasti ali uporabi, delovale skladno s ciljem in namenom tega protokola, o čemer obvešča organizacijo.

5 Država lahko v času, ko izrazi svoje soglasje, da bo zavezana s tem protokolom, ali kadar koli pozneje izjavi, da bo uporabljala določbe tega protokola za svoje ladje in letala iz četrtega odstavka, s čimer priznava, da samo ta država lahko izvaja te določbe zoper take ladje in letala.

11. ČLEN

POSTOPKI ZA SKLADNOST

1 Najpozneje dve leti po začetku veljavnosti tega protokola pogodbenice na zasedanju vzpostavijo postopke in mehanizme za presojo in spodbujanje skladnosti s tem protokolom. Taki postopki in mehanizmi so uvedeni, da bi na konstruktiven način omogočili izčrpno in odprto izmenjavo informacij.

2 After full consideration of any information submitted pursuant to this Protocol and any recommendations made through procedures or mechanisms established under paragraph 1, the Meeting of Contracting Parties may offer advice, assistance or cooperation to Contracting Parties and non-Contracting Parties.

ARTICLE 12

REGIONAL CO-OPERATION

In order to further the objectives of this Protocol, Contracting Parties with common interests to protect the marine environment in a given geographical area shall endeavour, taking into account characteristic regional features, to enhance regional cooperation including the conclusion of regional agreements consistent with this Protocol for the prevention, reduction and where practicable elimination of pollution caused by dumping or incineration at sea of wastes or other matter. Contracting Parties shall seek to cooperate with the parties to regional agreements in order to develop harmonized procedures to be followed by Contracting Parties to the different conventions concerned.

ARTICLE 13

TECHNICAL CO-OPERATION AND ASSISTANCE

1 Contracting Parties shall, through collaboration within the Organization and in coordination with other competent international organizations, promote bilateral and multilateral support for the prevention, reduction and where practicable elimination of pollution caused by dumping as provided for in this Protocol to those Contracting Parties that request it for:
.1 training of scientific and technical personnel for research, monitoring and enforcement, including as appropriate the supply of necessary equipment and facilities, with a view to strengthening national capabilities;
.2 advice on implementation of this Protocol;
.3 information and technical cooperation relating to waste minimization and clean production processes;
.4 information and technical cooperation relating to the disposal and treatment of waste and other measures to prevent, reduce and where practicable eliminate pollution caused by dumping; and
.5 access to and transfer of environmentally sound technologies and corresponding knowhow, in particular to developing countries and countries in transition to market economies, on favourable terms, including on concessional and preferential terms, as mutually agreed, taking into account the need to protect intellectual property rights as well as the special needs of developing countries and countries in transition to market economies.

2 The Organization shall perform the following functions:
.1 forward requests from Contracting Parties for technical cooperation to other Contracting Parties, taking into account such factors as technical capabilities;
.2 coordinate requests for assistance with other competent international organizations, as appropriate; and
.3 subject to the availability of adequate resources, assist developing countries and those in transition to market economies, which have declared their intention to become Contracting Parties to this Protocol, to examine the means necessary to achieve full implementation.

2 Po tehtni presoji informacij, poslanih na podlagi tega protokola, in priporočil, danih v okviru postopkov ali mehanizmov iz prvega odstavka, se lahko na zasedanju pogodbenic pogodbenicam in nepogodbenicam ponudijo nasveti, pomoč ali sodelovanje.

12. ČLEN

REGIONALNO SODELOVANJE

Da bi pogodbenice, ki imajo skupne interese za varstvo morskega okolja na določenem geografskem območju, spodbudile cilje tega protokola, si ob upoštevanju značilnih regionalnih posebnosti prizadevajo okrepiti regionalno sodelovanje, vključno s sklenitvijo regionalnih sporazumov, skladnih s tem protokolom, o preprečevanju, zmanjševanju, in če je to izvedljivo, odpravljanju onesnaževanja, ki ga na morju povzroča odmetavanje ali sežiganje odpadkov ali drugih snovi. Pogodbenice si prizadevajo sodelovati s podpisnicami regionalnih sporazumov, da bi uskladile postopke, ki jih morajo upoštevati pogodbenice različnih zadevnih konvencij.

13. ČLEN

STROKOVNO SODELOVANJE IN POMOČ

1 Pogodbenice s sodelovanjem v organizaciji in usklajevanjem z drugimi pristojnimi mednarodnimi organizacijami spodbujajo dvostransko in večstransko pomoč pri preprečevanju, zmanjševanju, in če je to izvedljivo, odpravljanju onesnaževanja, ki je posledica odmetavanja, opredeljenega v tem protokolu, tistim pogodbenicam, ki za pomoč zaprosijo zaradi:
.1 usposabljanja znanstvenega in strokovnega osebja za raziskovanje, spremljanje in izvajanje, če je primerno, skupaj z dobavo potrebne opreme in naprav, da se okrepi državna usposobljenost;
.2 svetovanja o izvajanju tega protokola;
.3 informacijskega in strokovnega sodelovanja pri največjem mogočem zmanjšanju odpadkov in postopkih za čisto proizvodnjo;
.4 informacijskega in strokovnega sodelovanja pri odlaganju in obdelavi odpadkov ter drugih ukrepih za preprečevanje, zmanjšanje, in če je to izvedljivo, odpravljanje onesnaževanja, ki ga povzroča odmetavanje, in zaradi
.5 dostopa do okoljsko zdravih tehnologij in ustreznega znanja ter izkušenj in zaradi njihovega prenosa, predvsem v države v razvoju in države na prehodu v tržna gospodarstva, po ugodnih pogojih skupaj z dogovorjenimi koncesijskimi in preferencialnimi pogoji ob upoštevanju potrebe po varstvu pravic intelektualne lastnine ter posebnih potreb držav v razvoju in držav na prehodu v tržna gospodarstva.

2 Organizacija opravlja te naloge:
.1 pošilja vloge pogodbenic za strokovno sodelovanje drugim pogodbenicam ob upoštevanju dejavnikov, kot so strokovne zmožnosti;
.2 usklajuje vloge za pomoč z drugimi pristojnimi mednarodnimi organizacijami, če je to ustrezno, in
.3 ob upoštevanju ustreznih virov pomaga državam v razvoju in tistim državam na prehodu v tržna gospodarstva, ki so izrazile svojo namero, da bodo postale pogodbenice tega protokola, in proučuje možnosti za popolno izvajanje protokola.

ARTICLE 14

SCIENTIFIC AND TECHNICAL RESEARCH

1 Contracting Parties shall take appropriate measures to promote and facilitate scientific and technical research on the prevention, reduction and where practicable elimination of pollution by dumping and other sources of marine pollution relevant to this Protocol. In particular, such research should include observation, measurement, evaluation and analysis of pollution by scientific methods.

2 Contracting Parties shall, to achieve the objectives of this Protocol, promote the availability of relevant information to other Contracting Parties who request it on:
.1 scientific and technical activities and measures undertaken in accordance with this Protocol;
.2 marine scientific and technological programs and their objectives; and
.3 the impacts observed from the monitoring and assessment conducted pursuant to Article 9.1.3.

ARTICLE 15

RESPONSABILITY AND LIABILITY

In accordance with the principles of international law regarding State responsibility for damage to the environment of other States or to any other area of the environment, the Contracting Parties undertake to develop procedures regarding liability arising from the dumping or incineration at sea of wastes or other matter.

ARTICLE 16

SETTLEMENT OF DISPUTES

1 Any disputes regarding the interpretation or application or this Protocol shall be resolved in the first instance through negotiation, mediation or conciliation, or other peaceful means chosen by parties to the dispute.

2 If no resolution is possible within twelve months after one Contracting Party has notified another that a dispute exists between them, the dispute shall be settled, at the request of a party to the dispute, by means of the Arbitral Procedure set forth in Annex 3, unless the parties to the dispute agree to use one of the procedures listed in paragraph 1 of Article 287 of the 1982 United Nations Convention on the Law of the Sea. The parties to the dispute may so agree, whether or not they are also States Parties to the 1982 United Nations Convention on the Law of the Sea

3 In the event an agreement to use one of the procedures listed in paragraph 1 of Article 287 of the 1982 United Nations Convention on the Law of the Sea is reached, the provisions set forth in Part XV of that Convention that are related to the chosen procedure would also apply, *mutatis mutandis*.

4 The twelve month period referred to in paragraph 2 may be extended for another twelve months by mutual consent of the parties concerned.

5 Notwithstanding paragraph 2, any State may, at the time it expresses its consent to be bound by this Protocol, notify the Secretary-General that, when it is a party to a dispute about the interpretation or application of Article 3.1 or 3.2, its consent will be required before the dispute may be settled by means of the Arbitral Procedure set forth in Annex 3.

14. ČLEN

ZNANSTVENO IN STROKOVNO RAZISKOVANJE

1 Pogodbenice sprejmejo ustrezne ukrepe za spodbujanje in olajšanje znanstvenega in strokovnega raziskovanja o preprečevanju, zmanjševanju, in če je to izvedljivo, odpravljanju onesnaževanja zaradi odmetavanja in drugih virov onesnaževanja morja, pomembnega za ta protokol. Raziskovanje mora vključevati predvsem opazovanje, merjenje, vrednotenje in analizo onesnaževanja po znanstvenih metodah.

2 Da bi uresničile cilje tega protokola, pogodbenice spodbujajo dostopnost ustreznih informacij za druge pogodbenice, ki zaprosijo za podatke o:
.1 znanstvenih in strokovnih dejavnostih in ukrepih, sprejetih v skladu s tem protokolom;
.2 pomorskih znanstvenih in strokovnih programih in njihovih ciljih ter o
.3 vplivih, opaženih s spremljanjem in ocenjevanjem iz tretjega pododstavka prvega odstavka 9. člena.

15. ČLEN

ODGOVORNOST

Pogodbenice se v skladu z načeli mednarodnega prava o odgovornosti držav za škodo, prizadejano okolju drugih držav ali kateremu koli drugemu območju okolja, zavezujejo, da bodo razvijale postopke za ugotavljanje odgovornosti, nastale zaradi odmetavanja ali sežiganja odpadkov ali drugih snovi na morju.

16. ČLEN

REŠEVANJE SPOROV

1 Vsi spori zaradi razlage ali uporabe tega protokola se na prvi stopnji rešujejo s pogajanjem, poravnavo ali spravo ali po drugi miroljubni poti, ki jo izberejo stranke v sporu.

2 Če spor ni rešen v dvanajstih mesecih po tem, ko je ena pogodbenica uradno obvestila drugo, da spor med njima obstaja, je spor na zahtevo stranke v sporu rešen z arbitražnim postopkom iz priloge 3, razen če se stranki v sporu sporazumeta, da bosta uporabili enega od postopkov, naštetih v prvem odstavku 287. člena Konvencije Združenih narodov o mednarodnem pomorskem pravu, 1982. Stranki v sporu se lahko o tem sporazumeta, ne glede na to, ali sta državi pogodbenici Konvencije Združenih narodov o pomorskem mednarodnem pravu, 1982.

3 Če je dosežen dogovor, da se uporabi eden od postopkov, naštetih v prvem odstavku 287. člena Konvencije Združenih narodov o pomorskem mednarodnem pravu, 1982, se določbe XV. dela omenjene konvencije, ki se navezujejo na izbrani postopek, prav tako smiselno uporabljajo.

4 Dvanajstmesečno obdobje iz drugega odstavka se z medsebojnim soglasjem vpletenih strank lahko podaljša za nadaljnjih dvanajst mesecev.

5 Ne glede na drugi odstavek lahko vsaka država, če je stranka v sporu zaradi razlage ali uporabe prvega ali drugega odstavka 3. člena, ko da svoje soglasje, da jo zavezuje ta protokol, uradno obvesti generalnega sekretarja o tem, da bo njeno soglasje potrebno, pred rešitvijo spora z arbitražnim postopkom, določenim v prilogi 3.

ARTICLE 17

INTERNATIONAL CO-OPERATION

Contracting Parties shall promote the objectives of this Protocol within the competent international organizations.

ARTICLE 18

MEETINGS OF THE CONTRACTING PARTIES

1 Meetings of Contracting Parties or Special Meetings of Contracting Parties shall keep under continuing review the implementation of this Protocol and evaluate its effectiveness with a view to identifying means of strengthening action, where necessary, to prevent, reduce and where practicable eliminate pollution caused by dumping and incineration at sea of wastes or other matter. To these ends, Meetings of Contracting Parties or Special Meetings of Contracting Parties may:
.1 review and adopt amendments to this Protocol in accordance with Articles 21 and 22;
.2 establish subsidiary bodies, as required, to consider any matter with a view to facilitating the effective implementation of this Protocol;
.3 invite appropriate expert bodies to advise the Contracting Parties or the Organization on matters relevant to this Protocol;
.4 promote cooperation with competent international organizations concerned with the prevention and control of pollution;
.5 consider the information made available pursuant to article 9.4;
.6 develop or adopt, in consultation with competent international organizations, procedures referred to in Article 8.2, including basic criteria for determining exceptional and emergency situations, and procedures for consultative advice and the safe disposal of matter at sea in such circumstances;
.7 consider and adopt resolutions; and
.8 consider any additional action that may be required.

2 The Contracting Parties at their first Meeting shall establish rules of procedure as necessary.

ARTICLE 19

DUTIES OF THE ORGANIZATION

1 The Organization shall be responsible for Secretariat duties in relation to this Protocol. Any Contracting Party to this Protocol not being a member of this Organization shall make an appropriate contribution to the expenses incurred by the Organization in performing these duties.

2 Secretariat duties necessary for the administration of this Protocol include:
.1 convening Meetings of Contracting Parties once per year, unless otherwise decided by Contracting Parties, and Special Meetings of Contracting Parties at any time on the request of two-thirds of the Contracting Parties;
.2 providing advice on request on the implementation of this Protocol and on guidance and procedures developed thereunder;
.3 considering enquiries by, and information from Contracting Parties, consulting with them and with the competent international organizations, and providing recommendations to Contracting Parties on questions related to, but not specifically covered by, this Protocol;
.4 preparing and assisting, in consultation with Contracting Parties and the competent international organizations, in the development and implementation of procedures referred to in Article 18.6.;

17. ČLEN

MEDNARODNO SODELOVANJE

Pogodbenice v pristojnih mednarodnih organizacijah spodbujajo cilje tega protokola.

18. ČLEN

ZASEDANJA POGODBENIC

1 Na zasedanjih ali posebnih zasedanjih pogodbenice stalno pregledujejo izvajanje tega protokola in vrednotijo njegovo učinkovitost, da bi prepoznale načine za okrepitev delovanja, kadar je potrebno, za preprečevanje, zmanjševanje, in če je to izvedljivo, odpravljanje onesnaževanja, ki ga povzročata odmetavanje in sežiganje odpadkov ali drugih snovi na morju. V ta namen lahko pogodbenice na svojih zasedanjih ali posebnih zasedanjih:
.1 pregledajo in sprejmejo spremembe tega protokola v skladu z 21. in 22. členom;
.2 ustanovijo potrebne pomožne organe, da bodo proučevali zadeve in olajšali izvajanje tega protokola;
.3 povabijo ustrezne strokovne organe, da svetujejo pogodbenicam ali organizaciji o zadevah, pomembnih za ta protokol;
.4 spodbujajo sodelovanje s pristojnimi mednarodnimi organizacijami, ki se ukvarjajo s preprečevanjem in nadzorom onesnaževanja;
.5 proučujejo informacije, ki so dane na voljo v četrtem odstavku 9 člena;
.6 po posvetu s pristojnimi mednarodnimi organizacijami pripravljajo ali sprejemajo postopke iz drugega odstavka 8. člena, vključno s temeljnimi merili za določanje izjemnih in izrednih razmer, in postopke za posvetovalne predloge in varno odlaganje snovi v morje v takih okoliščinah;
.7 proučujejo in sprejemajo sklepe in
.8 proučujejo vsako dodatno ravnanje, ki je morda potrebno.

2 Pogodbenice na svojem prvem zasedanju po potrebi sprejmejo poslovnik.

19. ČLEN

NALOGE ORGANIZACIJE

1 Organizacija je odgovorna za naloge sekretariata, povezane s tem protokolom. Vsaka pogodbenica tega protokola, ki ni članica te organizacije, ustrezno prispeva k plačilu izdatkov, ki jih ima organizacija z opravljanjem teh nalog.

2 Med nalogami sekretariata, ki se nanašajo na ta protokol, so:
.1 sklicevanje zasedanj pogodbenic enkrat letno, če pogodbenice ne sklenejo drugače, in posebnih zasedanj pogodbenic, kadar to zahtevata dve tretjini pogodbenic;
.2 svetovanje, kadar je zaprošeno, o izvajanju tega protokola in o smernicah ter postopkih tega protokola;
.3 proučevanje vprašanj in informacij pogodbenic, posvetovanje z njimi in s pristojnimi mednarodnimi organizacijami ter dajanje priporočil pogodbenicam o vprašanjih, ki so s tem protokolom povezana, vendar ne posebej zajeta v njem;
.4 priprava in izvajanje postopkov iz šestega odstavka 18. člena v sodelovanju s pogodbenicami in pristojnimi mednarodnimi organizacijami ter pomoč pri pripravi in izvajanju teh postopkov;

.5 conveying to the Contracting Parties concerned all notifications received by the Organization in accordance with this Protocol; and
.6 preparing, every two years, a budget and a financial account for the administration of this Protocol which shall be distributed to all Contracting Parties.

3 The Organization shall, subject to the availability of adequate resources, in addition to the requirements set out in Article 13.2.3.
.1 collaborate in assessments of the state of the marine environment; and
.2 cooperate with competent international organizations concerned with the prevention and control of pollution.

ARTICLE 20

ANNEXES

Annexes to this Protocol form an integral part of this Protocol.

ARTICLE 21

AMENDMENT OF THE PROTOCOL

1 Any Contracting Party may propose amendments to the Articles of this Protocol. The text of a proposed amendment shall be communicated to Contracting Parties by the Organization at least six months prior to its consideration at a Meeting of Contracting Parties or a Special Meeting of Contracting Parties.

2 Amendments to the Articles of this Protocol shall be adopted by a two-thirds majority vote of the Contracting Parties which are present and voting at the Meeting of Contracting Parties or Special Meeting of Contracting Parties designated for this purpose.

3 An amendment shall enter into force for the Contracting Parties which have accepted it on the sixtieth day after two-thirds of the Contracting Parties shall have deposited an instrument of acceptance of the amendment with the Organization. Thereafter the amendment shall enter into force for any other Contracting Party on the sixtieth day after the date on which that Contracting Party has deposited its instrument of acceptance of the amendment.

4 The Secretary-General shall inform Contracting Parties of any amendments adopted at Meetings of Contracting Parties and of the date on which such amendments enter into force generally and for each Contracting Party.

5 After entry into force of an amendment to this Protocol, any State that becomes a Contracting Party to this Protocol shall become a Contracting Party to this Protocol as amended, unless two-thirds of the Contracting Parties present and voting at the Meeting or Special Meeting of Contracting Parties adopting the amendment agree otherwise.

ARTICLE 22

AMENDMENT OF THE ANNEXES

1 Any Contracting Party may propose amendments to the Annexes to this Protocol. The text of a proposed amendment shall be communicated to Contracting Parties by the Organization at least six months prior to its consideration by a Meeting of Contracting Parties or Special Meeting of Contracting Parties.

2 Amendments to the Annexes other than Annex 3 will be based on scientific or technical considerations and may take into account legal, social and economic factors as appropriate. Such amendments shall be adopted by a two-thirds majority vote of the Contracting Parties present and voting at a Meeting of Contracting Parties or Special Meeting of Contracting Parties designated for this purpose.

.5 pošiljanje vseh uradnih obvestil, ki jih organizacija prejme v skladu s tem protokolom, pogodbenicam, in
.6 priprava proračuna in finančnega poročila o izvajanju tega protokola, ki se razdelita vsem pogodbenicam, vsaki dve leti.

3 Če so na voljo ustrezna sredstva, organizacija poleg zahtev iz tretjega pododstavka drugega odstavka 13. člena:
.1 sodeluje pri presojah stanja v morskem okolju in
.2 sodeluje s pristojnimi mednarodnimi organizacijami, ki se ukvarjajo s preprečevanjem in nadzorom onesnaževanja.

20. ČLEN

PRILOGE

Priloge k temu protokolu so njegov sestavni del.

21. ČLEN

SPREMEMBE PROTOKOLA

1 Vsaka pogodbenica lahko predlaga spremembe členov tega protokola. Organizacija sporoči besedilo predlagane spremembe pogodbenicam vsaj šest mesecev pred obravnavo spremembe na zasedanju ali posebnem zasedanju pogodbenic.

2 Spremembe členov tega protokola se sprejmejo z dvetretjinsko večino pogodbenic, ki so navzoče in glasujejo na zasedanju ali posebnem zasedanju pogodbenic, pooblaščenih v ta namen.

3 Za pogodbenice, ki so sprejele spremembo, začne veljati šestdeseti dan po tem, ko sta dve tretjini pogodbenic pri organizaciji deponirali listino o sprejetju spremembe. Zatem začne sprememba za vsako drugo pogodbenico veljati šestdeseti dan po datumu, ko je ta pogodbenica deponirala svojo listino o sprejetju spremembe.

4 Generalni sekretar obvesti pogodbenice o vsaki spremembi, sprejeti na zasedanju pogodbenic, in o datumu, ko ta sprememba začne veljati za vse in vsako pogodbenico posebej.

5 Po začetku veljavnosti spremembe tega protokola vsaka država, ki postane pogodbenica tega protokola, postane tudi pogodbenica spremenjenega protokola, razen če se dve tretjini pogodbenic, ki so navzoče in glasujejo na zasedanju ali posebnem zasedanju pogodbenic, na katerem se sprejema sprememba, o tem ne dogovorita drugače.

22. ČLEN

SPREMEMBA PRILOG

1 Vsaka pogodbenica lahko predlaga spremembe prilog tega protokola. Organizacija sporoči besedilo predlagane spremembe pogodbenicam vsaj šest mesecev pred obravnavo spremembe na zasedanju ali posebnem zasedanju pogodbenic.

2 Spremembe prilog, razen spremembe priloge 3, bodo temeljile na znanstvenih ali strokovnih spoznanjih in bodo lahko upoštevale pravne, socialne ali gospodarske dejavnike. Take spremembe se sprejmejo z dvetretjinsko večino pogodbenic, ki so navzoče in glasujejo na zasedanju ali posebnem zasedanju pogodbenic, pooblaščenih v ta namen.

3 The Organization shall without delay communicate to Contracting Parties amendments to the Annexes that have been adopted at a Meeting of Contracting Parties or Special Meeting of Contracting Parties.

4 Except as provided in paragraph 7, amendments to the Annexes shall enter into force for each Contracting Party immediately on notification of its acceptance to the Organization or 100 days after the date of their adoption at a Meeting of Contracting Parties, if that is later, except for those Contracting Parties which before the end of the 100 days make a declaration that they are not able to accept the amendment at that time. A Contracting Party may at any time substitute an acceptance for a previous declaration of objection and the amendment previously objected to shall thereupon enter into force for that Contracting Party.

5 The Secretary-General shall without delay notify Contracting Parties of instruments of acceptance or objection deposited with the Organization.

6 A new Annex or an amendment to an Annex which is related to an amendment to the Articles of this Protocol shall not enter into force until such time as the amendment to the Articles of this Protocol enters into force.

7 With regard to amendments to Annex 3 concerning the Arbitral Procedure and with regard to the adoption and entry into force of new Annexes the procedures on amendments to the Articles of this Protocol shall apply.

ARTICLE 23

RELATIONSHIP BETWEEN THE PROTOCOL AND THE CONVENTION

This Protocol will supersede the Convention as between Contracting Parties to this Protocol which are also Parties to the Convention.

ARTICLE 24

SIGNATURE, RATIFICATION, ACCEPTANCE, APPROVAL AND ACCESSION

1 This Protocol shall be open for signature by any State at the Headquarters of the Organization from 1 April 1997 to 31 March 1998 and shall thereafter remain open for accession by any State.

2 States may become Contracting Parties to this Protocol by:
.1 signature not subject to ratification, acceptance or approval; or
.2 signature subject to ratification, acceptance or approval, followed by ratification, acceptance or approval; or
.3 accession.

3 Ratification, acceptance, approval or accession shall be effected by the deposit of an instrument to that effect with the Secretary-General.

ARTICLE 25

ENTRY INTO FORCE

1 This Protocol shall enter into force on the thirtieth day following the date on which:
.1 at least 26 States have expressed their consent to be bound by this Protocol in accordance with Article 24; and
.2 at least 15 Contracting Parties to the Convention are included in the number of States referred to in paragraph 1.1.

3 Organizacija pogodbenicam nemudoma sporoči spremembe prilog, sprejete na zasedanju ali posebnem zasedanju pogodbenic.

4 Spremembe prilog, razen kot je določeno v sedmem odstavku, začnejo za vsako pogodbenico veljati takoj po uradnem obvestilu, poslanem organizaciji, da je pogodbenica sprejela spremembe, ali 100 dni po datumu sprejetja sprememb na zasedanju pogodbenic, če je to pozneje, razen za pogodbenice, ki pred potekom 100 dni izjavijo, da v tistem času sprememb ne morejo sprejeti. Pogodbenica lahko predhodno izjavo o ugovoru kadar koli nadomesti s sprejetjem spremembe, tako da predhodno zavrnjena sprememba nato začne veljati za to pogodbenico.

5 Generalni sekretar pogodbenice nemudoma obvesti, da so listine o sprejetju ali ugovoru deponirane pri organizaciji.

6 Nova priloga ali sprememba priloge, ki se nanaša na spremembo členov tega protokola, ne začne veljati, dokler ne začne veljati sprememba členov tega protokola.

7 Za spremembe priloge 3 v zvezi z arbitražnim postopkom in sprejetjem ter začetkom veljavnosti novih prilog se uporabljajo postopki za spremembe členov tega protokola.

23. ČLEN

RAZMERJE MED PROTOKOLOM IN KONVENCIJO

Ta protokol bo nadomestil konvencijo za tiste pogodbenice tega protokola, ki so tudi pogodbenice konvencije.

24. ČLEN

PODPIS, RATIFIKACIJA, SPREJETJE, ODOBRITEV IN PRISTOP

1 Protokol je vsem državam na voljo za podpis na sedežu organizacije od 1. aprila 1997 do 31. marca 1998, zatem pa je državam na voljo za pristop.

2 Države lahko postanejo pogodbenice tega protokola, če:
.1 ga podpišejo brez pridržka ratifikacije, sprejetja ali odobritve ali
.2 ga podpišejo s pridržkom ratifikacije, sprejetja ali odobritve, nato pa ratificirajo, sprejmejo ali odobrijo ali
.3 k njemu pristopijo.

3 Protokol se ratificira, sprejme, odobri ali se pristopi k njemu z deponiranjem ustrezne listine pri generalnem sekretarju.

25. ČLEN

ZAČETEK VELJAVNOSTI

1 Ta protokol začne veljati trideseti dan po dnevu, ko:
.1 vsaj 26 držav izrazi svoje soglasje o tem, da jih zavezuje ta protokol v skladu s 24. členom, in
.2 je vsaj 15 pogodbenic konvencije med državami iz prvega pododstavka prvega odstavka.

2 For each State that has expressed its consent to be bound by this Protocol in accordance with Article 24 following the date referred to in paragraph 1, this Protocol shall enter into force on the thirtieth day after the date on which such State expressed its consent.

ARTICLE 26

TRANSITIONAL PERIOD

1 Any State that was not a Contracting Party to the Convention before 31 December 1996 and that expresses its consent to be bound by this Protocol prior to its entry into force or within five years after its entry into force may, at the time it expresses its consent, notify the Secretary-General that, for reasons described in the notification, it will not be able to comply with specific provisions of this Protocol other than those provided in paragraph 2, for a transitional period that shall not exceed that described in paragraph 4.

2 No notification made under paragraph 1 shall affect the obligations of a Contracting Party to this Protocol with respect to incineration at sea or the dumping of radioactive wastes or other radioactive matter.

3 Any Contracting Party to this Protocol that has notified the Secretary-General under paragraph 1 that, for the specified transitional period, it will not be able to comply, in part or in whole, with Article 4.1 or Article 9 shall nonetheless during that period prohibit the dumping of wastes or other matter for which it has not issued a permit, use its best efforts to adopt administrative or legislative measures to ensure that issuance of permits and permit conditions comply with the provisions of Annex 2, and notify the Secretary-General of any permits issued.

4 Any transitional period specified in a notification made under paragraph 1 shall not extend beyond five years after such notification is submitted.

5 Contracting Parties that have made a notification under paragraph 1 shall submit to the first Meeting of Contracting Parties occurring after deposit of their instrument of ratification, acceptance, approval or accession a program and timetable to achieve full compliance with this Protocol, together with any requests for relevant technical cooperation and assistance in accordance with Article 13 of this Protocol.

6 Contracting Parties that have made a notification under paragraph 1 shall establish procedures and mechanisms for the transitional period to implement and monitor submitted programs designed to achieve full compliance with this Protocol. A report on progress toward compliance shall be submitted by such Contracting Parties to each Meeting of Contracting Parties held during their transitional period for appropriate action.

ARTICLE 27

WITHDRAWAL

1 Any Contracting Party may withdraw from this Protocol at any time after the expiry of two years from the date on which this Protocol enters into force for that Contracting Party.

2 Withdrawal shall be effected by the deposit of an instrument of withdrawal with the Secretary-General.

3 A withdrawal shall take effect one year after receipt by the Secretary-General of the instrument of withdrawal or such longer period as may be specified in that instrument.

2 Za vsako državo, ki je izrazila soglasje, da jo ta protokol v skladu s 24. členom zavezuje po dnevu iz prvega odstavka, začne ta protokol veljati trideseti dan po dnevu, ko je ta država izrazila svoje soglasje.

26. ČLEN

PREHODNO OBDOBJE

1 Vsaka država, ki pred 31. decembrom 1996 ni bila pogodbenica konvencije in soglaša, da jo ta protokol zavezuje, preden začne veljati ali v petih letih po njegovem začetku veljavnosti, lahko s svojim soglasjem uradno obvesti generalnega sekretarja, da iz razlogov, navedenih v uradnem obvestilu, v prehodnem obdobju, ki ne bo daljše od obdobja iz četrtega odstavka, ne bo mogla upoštevati posebnih določb tega protokola, razen tistih iz drugega odstavka.

2 Nobeno uradno obvestilo iz prvega odstavka ne vpliva na obveznosti pogodbenic tega protokola v zvezi s sežiganjem na morju ali odmetavanjem radioaktivnih odpadkov ali drugih radioaktivnih snovi.

3 Vsaka pogodbenica tega protokola, ki je generalnega sekretarja na podlagi prvega odstavka uradno obvestila, da v posebnem prehodnem obdobju ne bo mogla delno ali v celoti upoštevati prvega odstavka 4. člena ali 9. člena, kljub temu v tem obdobju prepoveduje odmetavanje odpadkov ali drugih snovi, za katere ni izdala dovoljenja, in si čim bolj prizadeva za sprejetje upravnih ali zakonodajnih ukrepov, s katerimi zagotovijo, da so izdaja dovoljenj in pogoji iz njih v skladu z določbami priloge 2, in generalnega sekretarja uradno obvesti o vsakem izdanem dovoljenju.

4 Nobeno prehodno obdobje, navedeno v uradnem obvestilu, poslanem na podlagi prvega odstavka, ni daljše od pet let po predložitvi uradnega obvestila.

5 Pogodbenice, ki so na podlagi prvega odstavka oddale uradno obvestilo, na prvem zasedanju pogodbenic, sklicanem po deponiranju njihove listine o ratifikaciji, sprejetju, odobritvi ali pristopu k njej, predstavijo program in časovni načrt za popolno skladnost s tem protokolom skupaj z zahtevki za ustrezno strokovno sodelovanje in pomoč v skladu s 13. členom tega protokola.

6 Pogodbenice, ki so na podlagi prvega odstavka oddale uradno obvestilo, vzpostavijo postopke in mehanizme za prehodno obdobje, v katerem bodo izvajale in spremljale predložene programe za popolno skladnost s tem protokolom. Te pogodbenice na vsakem zasedanju, sklicanem v prehodnem obdobju, predložijo poročilo o napredku za doseganje skladnosti zaradi ustreznega ukrepanja.

27. ČLEN

ODPOVED

1 Vsaka pogodbenica lahko odpove protokol kadar koli po poteku dveh let od dneva, ko je ta protokol začel veljati zanjo.

2 Protokol se odpove z listino o odpovedi generalnemu sekretarju.

3 Odpoved začne veljati eno leto po tem, ko generalni sekretar prejme listino o odpovedi, ali po toliko daljšem obdobju, kot je lahko določeno v tej listini.

ARTICLE 28
DEPOSITARY

1 This Protocol shall be deposited with the Secretary-General.

2 In addition to the functions specified in Articles 10.5, 16.5, 21.4, 22.5 and 26.5, the Secretary-General shall:

.1 inform all States which have signed this Protocol or acceded thereto of:
.1 each new signature or deposit of an instrument of ratification, acceptance, approval or accession, together with the date thereof;
.2 the date of entry into force of this Protocol; and
.3 the deposit of any instrument of withdrawal from this Protocol together with the date on which it was received and the date on which the withdrawal takes effect.
.2 transmit certified copies of this Protocol to all States which have signed this Protocol or acceded thereto.

3 As soon as this Protocol enters into force, a certified true copy thereof shall be transmitted by the Secretary-General to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

ARTICLE 29
AUTHENTIC TEXTS

This Protocol is established in a single original in the Arabic, Chinese, English, French, Russian and Spanish languages, each text being equally authentic.

IN WITNESS WHEREOF the undersigned being duly authorized by their respective Governments for that purpose have signed this Protocol.

DONE at London, this seventh day of November, one thousand nine hundred and ninety-six.

28. ČLEN
DEPOZITAR

1 Protokol se deponira pri generalnem sekretarju.

2 Poleg nalog iz petega odstavka 10. člena, petega odstavka 16. člena, četrtega odstavka 21. člena, petega odstavka 22. člena in petega odstavka 26. člena generalni sekretar:
.1 obvesti vse države, ki so podpisale ta protokol ali pristopile k njemu, o:
.1 vsakem novem podpisu ali deponiranju listine o ratifikaciji, sprejetju, odobritvi ali pristopu in datumu podpisa ali deponiranja;
.2 datumu začetka veljavnosti tega protokola in
.3 deponiranju vsake listine o odpovedi tega protokola in datumu njenega prejema ter datumu začetka veljavnosti odpovedi;

.2 pošlje overjene kopije tega protokola vsem državam, ki so ga podpisale ali pristopile k njemu.

3 Takoj ko začne protokol veljati, generalni sekretar pošlje overjeno kopijo protokola sekretariatu Združenih narodov za vpis v register in objavo v skladu s 102. členom Ustanovne listine Združenih narodov.

29. ČLEN
VERODOSTOJNA BESEDILA

Protokol je sestavljen v enem izvirniku v arabskem, kitajskem, angleškem, francoskem, ruskem in španskem jeziku, pri čemer so vsa besedila enako verodostojna.

DA BI TO POTRDILI, so podpisani, ki so jih za to pravilno pooblastile njihove vlade, podpisali ta protokol.

SESTAVLJENO V LONDONU sedmega novembra tisoč devetsto šestindevetdeset.

ANNEX 1

WASTES OR OTHER MATTER THAT MAY BE CONSIDERED FOR DUMPING

1 The following wastes or other matter are those that may be considered for dumping being mindful of the Objectives and General Obligations of this Protocol set out in Articles 2 and 3:
.1 dredged material;
.2 sewage sludge;
.3 fish waste, or material resulting from industrial fish processing operations;
.4 vessels and platforms or other man-made structures at sea;
.5 inert, inorganic geological material;
.6 organic material of natural origin; and
.7 bulky items primarily comprising iron, steel, concrete and similarly unharmful materials for which the concern is physical impact, and limited to those circumstances where such wastes are generated at locations, such as small islands with isolated communities, having no practicable access to disposal options other than dumping.

PRILOGA 1

ODPADKI ALI DRUGE SNOVI, KI SE LAHKO ODMETAVAJO

1 Odpadki ali druge snovi, ki se lahko odmetavajo, pri čemer se je treba zavedati ciljev in splošnih obveznosti iz tega protokola, opredeljenih v 2. in 3. členu, so:

.1 snovi pri izkopu;
.2 blato iz čistilnih naprav;
.3 ribji odpadki ali snovi, ki nastanejo pri industrijski predelavi rib;
.4 ladje in ploščadi ali druge umetne konstrukcije na morju;
.5 neaktivne, anorganske geološke snovi;
.6 organske snovi naravnega izvora in
.7 večji kosi, ki so v glavnem iz železnih, jeklenih, betonskih in podobnih neškodljivih snovi, ki imajo škodljiv fizični vpliv na okolje, in le v okoliščinah, ko se ti odpadki kopičijo na krajih, kot so majhni otoki s težko dostopnimi skupnostmi, ki praktično nimajo drugih možnosti odlaganja kot odmetavanje.

2 The wastes or other matter listed in paragraphs 1.4 and 1.7 may be considered for dumping, provided that material capable of creating floating debris or otherwise contributing to pollution of the marine environment has been removed to the maximum extent and provided that the material dumped poses no serious obstacle to fishing or navigation.

3 Notwithstanding the above, materials listed in paragraphs 1.1 to 1.7 containing levels of radioactivity greater than *de minimis* (exempt) concentrations as defined by the IAEA and adopted by Contracting Parties, shall not be considered eligible for dumping; provided further that within 25 years of 20 February 1994, and at each 25 year interval thereafter, Contracting Parties shall complete a scientific study relating to all radioactive wastes and other radioactive matter other than high level wastes or matter, taking into account such other factors as Contracting Parties consider appropriate and shall review the prohibition on dumping of such substances in accordance with the procedures set forth in Article 22.

2 Odpadki ali druge snovi iz četrtega in sedmega pododstavka prvega odstavka, se lahko odmetavajo, če so bile snovi, ki lahko imajo za posledico na površini plavajoče razbitine ali drugače prispevajo k onesnaževanju morskega okolja, v največji mogoči meri odstranjene in če odložene snovi niso resna ovira za ribolov ali plovbo.

3 Ne glede na navedeno, snovi iz sedmega in prvega pododstavka prvega odstavka, katerih stopnje radioaktivnosti so večje od najmanjših koncentracij (brez radioaktivnosti), kot je te stopnje opredelila Mednarodna agencija za atomsko energijo (IAEA), sprejele pa pogodbenice, niso primerne za odmetavanje, pod nadaljnjim pogojem, da pogodbenice v 25 letih od 20. februarja 1994 dalje in nato vsakih 25 let opravijo znanstveno raziskavo o vseh radioaktivnih odpadkih in drugih radioaktivnih snoveh, razen o visokoradioaktivnih odpadkih ali snoveh ob upoštevanju še drugih dejavnikov, ki jih imajo pogodbenice za primerne, in ponovno pregledajo prepoved odmetavanja takih snovi v skladu s postopki, naštetimi v 22. členu.

ANNEX 2

ASSESSMENT OF WASTES OR OTHER MATTER THAT MAY BE CONSIDERED FOR DUMPING

GENERAL

1 The acceptance of dumping under certain circumstances shall not remove the obligations under this Annex to make further attempts to reduce the necessity for dumping.

WASTE PREVENTION AUDIT

2 The initial stages in assessing alternatives to dumping should, as appropriate, include an evaluation of:
- .1 types, amounts and relative hazard of wastes generated;
- .2 details of the production process and the sources of wastes within that process; and
- .3 feasibility of the following waste reduction/prevention techniques:
  - .1 product reformulation;
  - .2 clean production technologies;
  - .3 process modification;
  - .4 input substitution; and
  - .5 on-site, closed-loop recycling.

3 In general terms, if the required audit reveals that opportunities exist for waste prevention at source, an applicant is expected to formulate and implement a waste prevention strategy, in collaboration with relevant local and national agencies, which includes specific waste reduction targets and provision for further waste prevention audits to ensure that these targets are being met. Permit issuance or renewal decisions shall assure compliance with any resulting waste reduction and prevention requirements.

4 For dredged material and sewage sludge, the goal of waste management should be to identify and control the sources of contamination. This should be achieved through implementation of waste prevention strategies and requires collaboration between the relevant local and national agencies involved with the control of point and non-point sources of pollution. Until this objective is met, the problems of contaminated dredged material may be addressed by using disposal management techniques at sea or on land.

PRILOGA 2

OCENA ODPADKOV ALI DRUGIH SNOVI, KI SE LAHKO ODMETAVAJO

SPLOŠNO

1 Sprejetje odmetavanja pod določenimi okoliščinami ne odvezuje obveznosti po tej prilogi, da si je treba nadalje prizadevati za zmanjšanje potrebe po odmetavanju.

PRESOJA PREPREČEVANJA NASTAJANJA ODPADKOV

2 Na začetnih stopnjah presoje drugih možnosti, kot je odmetavanje, je treba, če je to primerno, ovrednotiti tudi:
- .1 vrste, količine in relativne stopnje nevarnosti proizvedenih odpadkov;
- .2 načine proizvodnega procesa in vire odpadkov v tem procesu ter
- .3 izvedljivost naslednjih metod zmanjševanja/preprečevanja nastajanja odpadkov:
  - .1 preoblikovanje proizvodov;
  - .2 čista tehnologija proizvodnje;
  - .3 sprememba procesov;
  - .4 nadomeščanje vnosov in
  - .5 recikliranje z zaprto zanko na kraju samem.

3 Če potrebna presoja odkrije, da obstajajo možnosti za preprečevanje nastajanja odpadkov pri viru, se od prosilca pričakuje, da bo v sodelovanju z ustreznimi lokalnimi in državnimi agencijami pripravil in izvajal strategijo za preprečevanje nastajanja odpadkov, kar vključuje cilje za zmanjševanje odpadkov in zagotavljanje nadaljnjih presoj za preprečevanje nastajanja odpadkov zaradi uresničevanja teh ciljev. Glede na to izdaja dovoljenj ali sklepov o podaljšanju veljavnosti zagotavlja skladnost z zahtevami po zmanjševanju in preprečevanju nastajanja odpadkov.

4 Cilja ravnanja z odpadki pri izkopanih snoveh in blata iz čistilnih naprav morata biti ugotavljanje in nadzorovanje virov onesnaženja. To se mora doseči z izvajanjem strategij za preprečevanje nastajanja odpadkov in zahteva sodelovanje med ustreznimi lokalnimi in državnim agencijami, vključenimi v nadzor točkovnih in razpršenih virov onesnaženja. Dokler ta cilj ni izpolnjen, se problematika onesnaženih izkopanih snovi lahko rešuje z metodami za ravnanje z odpadki na morju in na kopnem.

CONSIDERATION OF WASTE MANAGEMENT OPTIONS

5 Applications to dump wastes or other matter shall demonstrate that appropriate consideration has been given to the following hierarchy of waste management options, which implies an order of increasing environmental impact:
.1 re-use;
.2 off-site recycling;
.3 destruction of hazardous constituents;
.4 treatment to reduce or remove the hazardous constituents; and
.5 disposal on land, into air and in water.

6 A permit to dump wastes or other matter shall be refused if the permitting authority determines that appropriate opportunities exist to re-use, recycle or treat the waste without undue risks to human health or the environment or disproportionate costs. The practical availability of other means of disposal should be considered in the light of a comparative risk assessment involving both dumping and the alternatives.

CHEMICAL, PHYSICAL AND BIOLOGICAL PROPERTIES

7 A detailed description and characterization of the waste is an essential precondition for the consideration of alternatives and the basis for a decision as to whether a waste may be dumped. If a waste is so poorly characterized that proper assessment cannot be made of its potential impacts on human health and the environment, that waste shall not be dumped.

8 Characterization of the wastes and their constituents shall take into account:
.1 origin, total amount, form and average composition;
.2 properties: physical, chemical, biochemical and biological;
.3 toxicity;
.4 persistence: physical, chemical and biological; and
.5 accumulation and biotransformation in biological materials or sediments.

ACTION LIST

9 Each Contracting Party shall develop a national Action List to provide a mechanism for screening candidate wastes and their constituents on the basis of their potential effects on human health and the marine environment. In selecting substances for consideration in an Action List, priority shall be given to toxic, persistent and bioaccumulative substances from anthropogenic sources (e.g. cadmium, mercury, organohalogens, petroleum hydrocarbons, and, whenever relevant, arsenic, lead, copper, zinc, beryllium, chromium, nickel and vanadium, organosilicon compounds, cyanides, fluorides and pesticides or their by-products other than organohalogens). An Action List can also be used as a trigger mechanism for further waste prevention considerations.

10 An Action List shall specify an upper level and may also specify a lower level. The upper level should be set so as to avoid acute or chronic effects on human health or on sensitive marine organisms representative of the marine ecosystem. Application of an Action List will result in three possible categories of waste:
.1 wastes which contain specified substances, or which cause biological responses, exceeding the relevant upper level shall not be dumped, unless made acceptable for dumping through the use of management techniques or processes;

VIDIK MOGOČIH VRST RAVNANJA Z ODPADKI

5 Vloge za odmetavanje odpadkov ali drugih snovi temeljijo na ustreznemu spoznanju o hierarhičnem zaporedju mogočih vrst ravnanja z odpadki, ki pomeni te stopnje rastočega vpliva na okolje:

.1 ponovna uporaba;
.2 recikliranje na drugem kraju;
.3 uničenje nevarnih sestavin;
.4 obdelava za zmanjšanje ali odpravo učinka nevarnih sestavin in
.5 odlaganje na kopno, zrak ali v vodo.

6 Dovoljenje za odmetavanje odpadkov ali drugih snovi se zavrne, če organ, ki izdaja dovoljenje, ugotovi, da obstajajo ustrezne možnosti za ponovno uporabo, recikliranje ali obdelavo odpadkov brez nepotrebnega tveganja za zdravje ljudi ali varstvo okolja ali nesorazmernih stroškov. Praktična možnost nadomeščanja z drugimi načini odlaganja se mora proučiti glede na primerjalno oceno tveganja, ki vključuje odmetavanje in druge možnosti ravnanja z odpadki.

KEMIJSKE, FIZIKALNE IN BIOLOŠKE LASTNOSTI

7 Podroben opis in značilnosti odpadkov so bistveni pogoj za premislek o mogočih vrstah ravnanja z odpadki in podlaga za odločitev, ali se odpadek lahko odvrže. Če je odpadek tako slabo označen, da njegovega vpliva na zdravje ljudi in varstvo okolja ni mogoče pravilno oceniti, se tak odpadek ne odvrže.

8 Označba odpadkov in njihovih sestavin upošteva:

.1 izvor, skupno količino, obliko in povprečno sestavo;
.2 lastnosti: fizikalne, kemijske, biokemijske in biološke;
.3 strupenost;
.4 obstojnost: fizikalna, kemijska in biološka in
.5 kopičenje in biopretvorbo v bioloških snoveh ali usedlinah.

SEZNAM UKREPOV

9 Vsaka pogodbenica pripravi državni seznam ukrepov, da zagotovi mehanizem za pregled mogočih odpadkov in njihovih sestavin na podlagi njihovih mogočih učinkov na zdravje ljudi in morsko okolje. Pri izbiri snovi, ki naj se vključijo na seznam ukrepov, je treba dati prednost strupenim, obstojnim in bioakumulativnim snovem iz antropogenih virov (npr. kadmij, živo srebro, organohalogenske spojine, naftni ogljikovodiki, in če je to ustrezno, arzen, svinec, baker, cink, berilij, krom, nikelj in vanadij, organosilicijeve spojine, cianidi, fluoridi in pesticidi ali njihovi stranski proizvodi, razen organohalogenskih spojin). Seznam ukrepov se lahko uporabi tudi kot sprožitveni mehanizem za nadaljnje premisleke o preprečevanju nastajanja odpadkov.

10 Seznam ukrepov opredeljuje zgornjo mejo, lahko pa tudi spodnjo. Zgornja meja mora biti postavljena, da se izogne akutnim ali kroničnim vplivom na zdravje ljudi ali na občutljive morske organizme, ki predstavljajo morski ekosistem. Posledica uporabe seznama ukrepov so tri mogoče vrste odpadkov:
.1 odpadki, ki vsebujejo določene snovi ali povzročajo biološke odzive nad določeno zgornjo mejo, se ne odmetavajo, razen če z uporabo posebnih metod ali procesov ravnanja z odpadki postanejo sprejemljivi za odmetavanje;

.2 wastes which contain specified substances, or which cause biological responses, below the relevant lower levels should be considered to be of little environmental concern in relation to dumping; and
.3 wastes which contain specified substances, or which cause biological responses, below the upper level but above the lower level require more detailed assessment before their suitability for dumping can be determined.

DUMP-SITE SELECTION

11 Information required to select a dump-site shall include:
.1 physical, chemical and biological characteristics of the water-column and the seabed;
.2 location of amenities, values and other uses of the sea in the area under consideration;
.3 assessment of the constituent fluxes associated with dumping in relation to existing fluxes of substances in the marine environment; and
.4 economic and operational feasibility.

ASSESSMENT OF POTENTIAL EFFECTS

12 Assessment of potential effects should lead to a concise statement of the expected consequences of the sea or land disposal options, ie, the "Impact Hypothesis". It provides a basis for deciding whether to approve or reject the proposed disposal option and for defining environmental monitoring requirements.

13 The assessment for dumping should integrate information on waste characteristics, conditions at the proposed dump-site(s), fluxes, and proposed disposal techniques and specify the potential effects on human health, living resources, amenities and other legitimate uses of the sea. It should define the nature, temporal and spatial scales and duration of expected impacts based on reasonably conservative assumptions.

14 An analysis of each disposal option should be considered in the light of a comparative assessment of the following concerns: human health risks, environmental costs, hazards (including accidents), economics and exclusion of future uses. If this assessment reveals that adequate information is not available to determine the likely effects of the proposed disposal option then this option should not be considered further. In addition, if the interpretation of the comparative assessment shows the dumping option to be less preferable, a permit for dumping should not be given.

15 Each assessment should conclude with a statement supporting a decision to issue or refuse a permit for dumping.

MONITORING

16 Monitoring is used to verify that permit conditions are met – compliance monitoring – and that the assumptions made during the permit review and site selection process were correct and sufficient to protect the environment and human health – field monitoring. It is essential that such monitoring programs have clearly defined objectives.

.2 odpadki, ki vsebujejo določene snovi ali povzročajo biološke odzive pod določenimi spodnjimi mejami, so odpadki, katerih odmetavanje nepomembno vpliva na okolje, in
.3 odpadki, ki vsebujejo določene snovi ali povzročajo biološke odzive pod zgornjo, vendar nad spodnjo mejo, zahtevajo natančnejšo presojo, preden se lahko odloča o njihovi primernosti za odmetavanje.

IZBIRA ODLAGALIŠČ

11 Informacije, potrebne za izbiro odlagališča, vključujejo:
.1 fizikalne, kemijske in biološke značilnosti vodnega stebra in morskega dna;
.2 območje dobrin za uživanje okolja in drugih možnosti za uporabo morja na tem območju;
.3 presojo tokov sestavin, povezanih z odmetavanjem, glede na obstoječe tokove snovi v morskem okolju in
.4 gospodarsko in operativno izvedljivost.

PRESOJA MOGOČIH VPLIVOV

12 Na podlagi presoje mogočih vplivov je treba oblikovati jedrnato izjavo o pričakovanih posledicah mogočih načinov odlaganja v morje ali na kopno, tj. »domnevo o vplivu na okolje«. To je podlaga za odločitev, ali naj se predlagani način odlaganja odobri ali zavrne, in za opredelitev zahtev za spremljanje stanja v okolju.

13 Presoja odmetavanja mora vključevati informacije o značilnostih odpadkov, razmerah na predlaganem(ih) odlagališču(ih), tokovih in predlaganih metodah odlaganja ter mora podrobno opredeljevati mogoče vplive na zdravje ljudi, žive vire, dobrine in druge zakonite oblike uporabe morja. Opredeljevati mora naravo, časovni in prostorski obseg ter trajanje pričakovanih vplivov, ki temeljijo na razumnih predpostavkah.

14 Analiza vsake mogoče oblike odlaganja se mora upoštevati z vidika primerjalne presoje teh pomembnih vprašanj: nevarnost za zdravje ljudi, okoljski stroški, nevarnost (vključno z nesrečami), gospodarnost in izključitev nadaljnje uporabe. Če ta presoja odkrije, da ni na voljo ustreznih informacij, s katerimi bi se lahko ugotovili verjetni vplivi predlaganega načina odlaganja, se tak način ne sme nadalje uporabljati. Če poleg tega razlaga primerjalne ocene kaže, da je izbira odmetavanja manj zaželena, se dovoljenje za odmetavanje ne sme izdati.

15 Vsaka presoja se mora končati z mnenjem v podporo sklepu, da se dovoljenje za odmetavanje izda ali zavrne.

SPREMLJANJE STANJA

16 S spremljanjem se preverja, ali so izpolnjeni pogoji iz dovoljenja – spremljanje skladnosti – in ali so bile domneve, sprejete med pregledom dovoljenja s postopkom izbiranja kraja, pravilnega in zadovoljivega za varstvo okolja in zdravje ljudi – spremljanje na kraju samem. Bistveno je, da imajo ti programi spremljanja jasno opredeljene cilje.

PERMIT AND PERMIT CONDITIONS

17 A decision to issue a permit should only be made if all impact evaluations are completed and the monitoring requirements are determined. The provisions of the permit shall ensure, as far as practicable, that environmental disturbance and detriment are minimized and the benefits maximized. Any permit issued shall contain data and information specifying:
.1 the types and sources of materials to be dumped;
.2 the location of the dump-site(s);
.3 the method of dumping; and
.4 monitoring and reporting requirements.

18 Permits should be reviewed at regular intervals, taking into account the results of monitoring and the objectives of monitoring programs. Review of monitoring results will indicate whether field programs need to be continued, revised or terminated and will contribute to informed decisions regarding the continuance, modification or revocation of permits. This provides an important feedback mechanism for the protection of human health and the marine environment.

DOVOLJENJE IN POGOJI IZ DOVOLJENJA

17 Sklep, da se izda dovoljenje, je mogoč, če je ovrednotenje vplivov dokončano in so zahteve za spremljanje določene. Določbe iz dovoljenja zagotavljajo, če je to izvedljivo, da so okoljske motnje in okoljska škoda čim manjše, koristi pa čim večje. Vsako izdano dovoljenje vsebuje podatke in informacije, ki opredeljujejo:

.1 vrste in vire snovi, ki bodo odvrženi;
.2 kraj odlagališč(a);
.3 način odmetavanja in
.4 zahteve spremljanja in poročanja.

18 Dovoljenja se morajo redno pregledovati ob upoštevanju izidov in ciljev programov spremljanja. Pregled izidov spremljanja bo pokazal, ali naj se programi na kraju samem nadaljujejo, spremenijo ali končajo, in bo prispeval k ozaveščenim sklepom o nadaljnji veljavnosti, spreminjanju ali preklicu dovoljenj. To je pomemben mehanizem povratnih informacij za varstvo zdravja ljudi in morskega okolja.

ANNEX 3

ARBITRAL PROCEDURE

Article 1

1 An Arbitral Tribunal (hereinafter referred to as the "Tribunal") shall be established upon the request of a Contracting Party addressed to another Contracting Party in application of Article 16 of this Protocol. The request for arbitration shall consist of a statement of the case together with any supporting documents.

2 The requesting Contracting Party shall inform the Secretary-General of:
.1 its request for arbitration; and
.2 the provisions of this Protocol the interpretation or application of which is, in its opinion, the subject of disagreement.

3 The Secretary-General shall transmit this information to all Contracting States.

Article 2

1 The Tribunal shall consist of a single arbitrator if so agreed between the parties to the dispute within 30 days from the date of receipt of the request for arbitration.

2 In the case of the death, disability or default of the arbitrator, the parties to a dispute may agree upon a replacement within 30 days of such death, disability or default.

Article 3

1 Where the parties to a dispute do not agree upon a Tribunal in accordance with Article 2 of this Annex, the Tribunal shall consist of three members:
.1 one arbitrator nominated by each party to the dispute; and
.2 a third arbitrator who shall be nominated by agreement between the two first named and who shall act as its Chairman.

PRILOGA 3

ARBITRAŽNI POSTOPEK

1. člen

1 Arbitražno sodišče (v nadaljevanju »sodišče«) je ustanovljeno na zahtevo pogodbenice, ki je na podlagi 16. člena tega protokola naslovljena na drugo pogodbenico. Zahtevo za arbitražo sestavlja predstavitev primera skupaj z ustrezno dokumentacijo.

2 Pogodbenica, ki zahteva arbitražo, obvesti generalnega sekretarja o:
.1 svoji zahtevi za arbitražo in
.2 določbah tega protokola, katerih razlaga ali uporaba je po njenem mnenju razlog za nesoglasje.

3 Generalni sekretar pošlje to informacijo vsem državam pogodbenicam.

2. člen

1 Sodišče sestavlja en razsodnik, če se stranki v sporu tako dogovorita v 30 dneh po datumu prejema zahteve za arbitražo.

2 Ob smrti, delovni nezmožnosti ali izostanku razsodnika se stranki v sporu lahko dogovorita o njegovi zamenjavi.

3. člen

1 Če se stranki v sporu ne sporazumeta o sodišču v skladu z 2. členom te priloge, sodišče sestavljajo trije člani:

.1 dva razsodnika, od katerih vsaka stranka v sporu imenuje svojega, in
.2 tretji razsodnik, ki ga sporazumno imenujeta prva dva imenovana razsodnika, deluje pa kot predsednik sodišča.

2 If the Chairman of a Tribunal is not nominated within 30 days of nomination of the second arbitrator, the parties to a dispute shall, upon the request of one party, submit to the Secretary-General within a period of 30 days an agreed list of qualified persons. The Secretary-General shall select the Chairman from such list as soon as possible. He shall not select a Chairman who is or has been a national of one party to the dispute except with the consent of the other party to the dispute.

3 If one party to a dispute fails to nominate an arbitrator as provided in paragraph 1.1 within 60 days from the date of receipt of the request for arbitration, the other party may request the submission to the Secretary-General within a period of 30 days of an agreed list of qualified persons. The Secretary-General shall select the Chairman of the Tribunal from such list as soon as possible. The Chairman shall then request the party which has not nominated an arbitrator to do so. If this party does not nominate an arbitrator within 15 days of such request, the Secretary-General shall, upon request of the Chairman, nominate the arbitrator from the agreed list of qualified persons.

4 In the case of the death, disability or default of an arbitrator, the party to the dispute who nominated him shall nominate a replacement within 30 days of such death, disability or default. If the party does not nominate a replacement, the arbitration shall proceed with the remaining arbitrators. In the case of the death, disability or default of the Chairman, a replacement shall be nominated in accordance with the provision of paragraphs 1.2 and 2 within 90 days of such death, disability or default.

5 A list of arbitrators shall be maintained by the Secretary-General and composed of qualified persons nominated by the Contracting Parties. Each Contracting Party may designate for inclusion in the list four persons who shall not necessarily be its nationals. If the parties to the dispute have failed within the specified time limits to submit to the Secretary-General an agreed list of qualified persons as provided for in paragraphs 2, 3 and 4, the Secretary-General shall select from the list maintained by him the arbitrator or arbitrators not yet nominated.

Article 4

The Tribunal may hear and determine counter-claims arising directly out of the subject matter of the dispute.

Article 5

Each party to the dispute shall be responsible for the costs entailed by the preparation of its own case. The remuneration of the members of the Tribunal and of all general expenses incurred by the arbitration shall be borne equally by the parties to the dispute. The Tribunal shall keep a record of all its expenses and shall furnish a final statement thereof to the parties.

Article 6

Any Contracting Party which has an interest of a legal nature which may be affected by the decision in the case may, after giving written notice to the parties to the dispute which have originally initiated the procedure, intervene in the arbitration procedure with the consent of the Tribunal and at its own expense. Any such intervener shall have the right to present evidence, briefs and oral argument on the matters giving rise to its intervention, in accordance with procedures established pursuant to Article 7 of this Annex, but shall have no rights with respect to the composition of the Tribunal.

2 Če predsednik sodišča ni imenovan v 30 dneh po imenovanju drugega razsodnika, stranki v sporu na zahtevo ene stranke predložita generalnemu sekretarju v nadaljnjem obdobju 30 dni dogovorjeni seznam usposobljenih oseb. Generalni sekretar čim prej izbere predsednika s tega seznama. Generalni sekretar ne izbere predsednika, ki je ali je bil državljan ene stranke v sporu, razen s soglasjem druge stranke v sporu.

3 Če stranka v sporu v 60 dneh po datumu prejema zahteve za arbitražo ne imenuje razsodnika iz prvega pododstavka prvega odstavka, lahko druga stranka zahteva, da se generalnemu sekretarju v 30 dneh predloži dogovorjeni seznam usposobljenih oseb. Generalni sekretar čim prej izbere predsednika s tega seznama. Predsednik nato zahteva, da stranka, ki ni imenovala razsodnika, to stori. Če ta stranka ne imenuje razsodnika v 15 dneh po tej zahtevi, generalni sekretar na zahtevo predsednika imenuje razsodnika z dogovorjenega seznama usposobljenih oseb.

4 Ob smrti, delovni nezmožnosti ali izostanku razsodnika stranka v sporu, ki ga je imenovala, v 30 dneh po tem imenuje nadomestnega razsodnika. Če stranka ne imenuje nadomestnega razsodnika, se arbitraža nadaljuje s preostalima razsodnikoma. Ob smrti, delovni nezmožnosti ali izostanku predsednika je nadomestni predsednik imenovan v skladu z določbama drugega pododstavka prvega odstavka in drugega odstavka v 90 dneh po smrti, delovni nezmožnosti ali izostanku.

5 Generalni sekretar skrbi za seznam razsodnikov, na katerem so usposobljene osebe, ki jih imenujejo pogodbenice. Vsaka pogodbenica lahko na seznam uvrsti štiri osebe, ki niso nujno njeni državljani. Če stranke v sporu generalnemu sekretarju v določenem roku ne predložijo dogovorjenega seznama usposobljenih oseb, kot je to predvideno v drugem, tretjem in četrtem odstavku, generalni sekretar izbere s seznama, za katerega skrbi, razsodnika ali razsodnike, ki še niso imenovani.

4. člen

Sodišče lahko obravnava in odloča o nasprotnih zahtevkih, ki izhajajo neposredno iz predmeta spora.

5. člen

Vsaka stranka v sporu je odgovorna za stroške, nastale ob pripravi njenega lastnega primera. Plačilo za člane sodišča in plačilo vseh splošnih stroškov, nastalih z arbitražo, krijejo stranke v sporu v enakem deležu. Sodišče vodi evidenco o vseh stroških in strankam predloži končni obračun.

6. člen

Vsaka pogodbenica, ki ima v sporni zadevi pravni interes, ki ga odločitev utegne prizadeti, lahko s soglasjem sodišča in na svoje stroške po pisnem obvestilu strankam v sporu, ki so prve sprožile postopek, poseže v arbitražni postopek. Vsak tak posredovalec ima pravico predstaviti dokaze, pisne in ustne utemeljitve zadev, ki so privedle do posredovanja, v skladu s postopki, določenimi v 7. členu te priloge, nima pa pravic glede sestave sodišča.

Article 7

A Tribunal established under the provisions of this Annex shall decide its own rules of procedure.

Article 8

1 Unless a Tribunal consists of a single arbitrator, decisions of the Tribunal as to its procedure, its place of meeting, and any question related to the dispute laid before it, shall be taken by majority vote of its members. However, the absence or abstention of any member of the Tribunal who was nominated by a party to the dispute shall not constitute an impediment to the Tribunal reaching a decision. In case of equal voting, the vote of the Chairman shall be decisive.

2 The parties to the dispute shall facilitate the work of the Tribunal and in particular shall, in accordance with their legislation and using all means at their disposal:
.1 provide the Tribunal with all necessary documents and information; and
.2 enable the Tribunal to enter their territory, to hear witnesses or experts, and to visit the scene.

3 The failure of a party to the dispute to comply with the provisions of paragraph 2 shall not preclude the Tribunal from reaching a decision and rendering an award.

Article 9

The Tribunal shall render its award within five months from the time it is established unless it finds it necessary to extend that time limit for a period not to exceed five months. The award of the Tribunal shall be accompanied by a statement of reasons for the decision. It shall be final and without appeal and shall be communicated to the Secretary-General who shall inform the Contracting Parties. The parties to the dispute shall immediately comply with the award.

7. člen

Sodišče, ustanovljeno po določbah te priloge, sprejme svoj pravilnik.

8. člen

1 Če sodišča ne sestavlja en razsodnik, se odločitve sodišča o arbitražnem postopku, kraju zasedanja in zadevah, povezanih s sporom, ki ga sodišče obravnava, sprejemajo z večino glasov njegovih članov. Odsotnost ali vzdržan glas katerega koli člana sodišča, ki ga je imenovala stranka v sporu, sodišča ne ovira, da bi sprejelo odločitev. Ob neodločenem glasovanju odloči glas predsednika.

2 Stranki v sporu olajšata delo sodišča in v skladu s svojo zakonodajo in uporabo vseh sredstev, ki jih imata na voljo:
.1 sodišču zagotovita vse potrebne dokumente in informacije ter
.2 mu omogočita vstop na njuno ozemlje, zaslišanje prič ali izvedencev in ogled kraja.

3 Dejstvo, da stranka v sporu ni izpolnila določb drugega odstavka, ne zadrži sprejetja odločitve sodišča in razglasitve razsodbe.

9. člen

Sodišče razglasi svojo razsodbo v petih mesecih po tem, ko je bilo ustanovljeno, razen če ugotovi, da je ta rok treba podaljšati za obdobje, ki ni daljše kot pet mesecev. Razsodbi sodišča je priložena obrazložitev razlogov za odločitev. Odločitev je dokončna, pritožba nanjo ni mogoča in se sporoči generalnemu sekretarju, ki z njo seznani pogodbenice.

3. člen

Za izvajanje protokola skrbita Ministrstvo za promet in Ministrstvo za okolje in prostor.

4. člen

Ta zakon začne veljati petnajsti dan po objavi v Uradnem listu Republike Slovenije – Mednarodne pogodbe.

Št. 802-06/05-11/1
Ljubljana, dne 21. junija 2005
EPA 233-IV

Predsednik
Državnega zbora
Republike Slovenije
France Cukjati, dr. med. l. r.

32. Zakon o ratifikaciji Protokola iz leta 1997 o spremembi Mednarodne konvencije o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo (MPKPOM)

Na podlagi druge alinee prvega odstavka 107. člena in prvega odstavka 91. člena Ustave Republike Slovenije izdajam

U K A Z
O RAZGLASITVI ZAKONA O RATIFIKACIJI PROTOKOLA IZ LETA 1997 O SPREMEMBI MEDNARODNE KONVENCIJE O PREPREČEVANJU ONESNAŽEVANJA MORJA Z LADIJ, 1973, KOT JE BILA SPREMENJENA S PROTOKOLOM IZ LETA 1978, KI SE NANAŠA NANJO (MPKPOM)

Razglašam Zakon o ratifikaciji Protokola iz leta 1997 o spremembi Mednarodne konvencije o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo (MPKPOM), ki ga je sprejel Državni zbor Republike Slovenije na seji 21. junija 2005.

Št. 001-22-46/05
Ljubljana, 29. junija 2005

dr. Janez Drnovšek l. r.
Predsednik
Republike Slovenije

Z A K O N
O RATIFIKACIJI PROTOKOLA IZ LETA 1997 O SPREMEMBI MEDNARODNE KONVENCIJE O PREPREČEVANJU ONESNAŽEVANJA MORJA Z LADIJ, 1973, KOT JE BILA SPREMENJENA S PROTOKOLOM IZ LETA 1978, KI SE NANAŠA NANJO (MPKPOM)

1. člen

Ratificira se Protokol iz leta 1997 o spremembi Mednarodne konvencije o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo sestavljen 26. septembra 1997 v Londonu.

2. člen

Besedilo protokola se v izvirniku v angleškem jeziku ter prevodu v slovenskem jeziku glasi:*

PROTOCOL OF 1997
TO AMEND THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BYTHE PROTOCOL OF 1978 RELATING THERETO

THE PARTIES TO THE PRESENT PROTOCOL,

BEING Parties to the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973,

RECOGNIZING the need to prevent and control air pollution from ships,

RECOGNIZING Principle 15 of the Rio Declaration on Environment and Development which calls for the application of a precautionary approach,

CONSIDERING that this objective could best be achieved by the conclusion of a Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto,

HAVE AGREED as follows:

Article 1
Instrument to be amended

The instrument which the present Protocol amends is the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as the "Convention").

PROTOKOL IZ LETA 1997
O SPREMEMBI MEDNARODNE KONVENCIJE O PREPREČEVANJU ONESNAŽEVANJA MORJA Z LADIJ, 1973, KOT JE BILA SPREMENJENA S PROTOKOLOM IZ LETA 1978, KI SE NANAŠA NANJO

POGODBENICE TEGA PROTOKOLA,

KI SO pogodbenice Protokola iz leta 1978, ki se nanaša na Mednarodno konvencijo o preprečevanju onesnaževanja morja z ladij, 1973,

KI PRIZNAVAJO potrebo po preprečevanju in nadziranju onesnaževanja zraka z ladij,

KI SE SKLICUJEJO na 15. načelo Deklaracije iz Ria o okolju in razvoju, ki poziva k uporabi previdnostnega pristopa,

KI MENIJO, da bi se ta cilj lahko najbolje dosegel s sklenitvijo Protokola iz leta 1997 o spremembi Mednarodne konvencije o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo,

SO SE SPORAZUMELE:

1. člen
Listina, ki se spreminja

Listina, ki jo ta protokol spreminja, je Mednarodna konvencija o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo (v nadaljevanju »konvencija«).

* Besedilo protokola v arabskem, francoskem, kitajskem, ruskem in španskem jeziku je na vpogled v Sektorju za mednarodno pravo Ministrstva za zunanje zadeve.

Article 2

Addition of Annex VI to the Convention

Annex VI entitled Regulations for the Prevention of Air Pollution from Ships, the text of which is set out in the Annex to the present Protocol, is added.

Article 3

General obligations

1 The Convention and the present Protocol shall, as between the Parties to the present Protocol, be read and interpreted together as one single instrument.

2 Every reference to the present Protocol constitutes at the same time a reference to the Annex hereto.

Article 4

Amendment procedure

In applying Article 16 of the Convention to an amendment to Annex VI and its appendices, the reference to "a Party to the Convention" shall be deemed to mean the reference to a Party bound by that Annex.

FINAL CLAUSES

Article 5

Signature, ratification, acceptance, approval and accession

1 The present Protocol shall be open for signature at the Headquarters of the International Maritime Organization (hereinafter referred to as the "Organization") from 1 January 1998 until 31 December 1998 and shall thereafter remain open for accession. Only Contracting States to the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973 (hereinafter referred to as the "1978 Protocol") may become Parties to the present Protocol by:

(a) signature without reservation as to ratification, acceptance or approval; or

(b) signature, subject to ratification, acceptance or approval, followed by ratification, acceptance or approval; or

(c) accession.

2 Ratification, acceptance, approval or accession shall be effected by the deposit of an instrument to that effect with the Secretary-General of the Organization (hereinafter referred to as the "Secretary-General").

Article 6

Entry into force

1 The present Protocol shall enter into force twelve months after the date on which not less than fifteen States, the combined merchant fleets of which constitute not less than 50 percent of the gross tonnage of the world's merchant shipping, have become Parties to it in accordance with Article 5 of the present Protocol.

2 Any instrument of ratification, acceptance, approval or accession deposited after the date on which the present Protocol enters into force shall take effect three months after the date of deposit.

3 After the date on which an amendment to the present Protocol is deemed to have been accepted in accordance with Article 16 of the Convention, any instrument of ratification, acceptance, approval or accession deposited shall apply to the present Protocol as amended.

Article 7

Denunciation

1 The present Protocol may be denounced by any Party to the present Protocol at any time after the expiry of five years from the date on which the Protocol enters into force for that Party.

2 Denunciation shall be effected by the deposit of an instrument of denunciation with the Secretary-General.

2. člen

Dodana Priloga VI h konvenciji

Dodana je Priloga VI z naslovom Pravila o preprečevanju onesnaževanja zraka z ladij, katere besedilo je navedeno v prilogi k temu protokolu.

3. člen

Splošne obveznosti

1 Konvencija in ta protokol se med pogodbenicami tega protokola bereta in razlagata skupaj kot ena sama listina.

2 Vsako sklicevanje na ta protokol pomeni hkrati tudi sklicevanje na prilogo k njemu.

4. člen

Postopek spreminjanja

Pri uporabi 16. člena konvencije za spremembe v Prilogi VI in njenih dodatkih sklicevanje na »pogodbenico konvencije« pomeni sklicevanje na pogodbenico, ki jo zavezuje omenjena priloga.

KONČNE DOLOČBE

5. člen

Podpis, ratifikacija, sprejetje, odobritev in pristop

1 Ta protokol je na voljo za podpis na sedežu Mednarodne pomorske organizacije (v nadaljevanju »Organizacija«) od 1. januarja 1998 do 31. decembra 1998, pozneje pa je na voljo za pristop. Samo države pogodbenice Protokola iz leta 1978, ki se nanaša na Mednarodno konvencijo o preprečevanju onesnaževanja morja z ladij, 1973 (v nadaljevanju »Protokol iz leta 1978«), lahko postanejo pogodbenice tega protokola, če:

(a) ga podpišejo brez pridržkov glede ratifikacije, sprejetja ali odobritve ali

(b) ga podpišejo s pridržkom glede ratifikacije, sprejetja ali odobritve, nato pa ratificirajo, sprejmejo ali odobrijo ali če

(c) pristopijo k njemu.

2 Ratifikacija, sprejetje, odobritev ali pristop se opravijo z deponiranjem ustrezne listine pri generalnem sekretarju Organizacije (v nadaljevanju »generalni sekretar«).

6. člen

Začetek veljavnosti

1 Ta protokol začne veljati dvanajst mesecev po datumu, ko je najmanj petnajst držav, katerih skupna trgovska flota predstavlja najmanj 50 odstotkov bruto tonaže svetovnega trgovskega ladjevja, postalo njegova pogodbenica v skladu s 5. členom tega protokola.

2 Vsaka listina o ratifikaciji, sprejetju, odobritvi ali pristopu, deponirana po datumu, ko je ta protokol začel veljati, začne učinkovati tri mesece po datumu deponiranja.

3 Po datumu, ko se sprememba tega protokola šteje za sprejeto v skladu s 16. členom konvencije, se vsaka deponirana listina o ratifikaciji, sprejetju, odobritvi ali pristopu nanaša na ta protokol, kot je bil spremenjen.

7. člen

Odpoved

1 Ta protokol lahko vsaka pogodbenica tega protokola odpove kadar koli po poteku petih let od datuma veljavnosti tega protokola za to pogodbenico.

2 Odpoved se opravi z deponiranjem listine o odpovedi pri generalnem sekretarju.

3 A denunciation shall take effect twelve months after receipt of the notification by the Secretary-General or after the expiry of any other longer period which may be indicated in the notification.

4 A denunciation of the 1978 Protocol in accordance with Article VII thereof shall be deemed to include a denunciation of the present Protocol in accordance with this Article. Such denunciation shall take effect on the date on which denunciation of the 1978 Protocol takes effect in accordance with Article VII of that Protocol.

Article 8

Depositary

1 The present Protocol shall be deposited with the Secretary-General (hereinafter referred to as the "Depositary").

2 The Depositary shall:

(a) inform all States which have signed the present Protocol or acceded thereto of:

(i) each new signature or deposit of an instrument of ratification, acceptance, approval or accession, together with the date thereof;

(ii) the date of entry into force of the present Protocol; and

(iii) the deposit of any instrument of denunciation of the present Protocol, together with the date on which it was received and the date on which the denunciation takes effect; and

(b) transmit certified true copies of the present Protocol to all States which have signed the present Protocol or acceded thereto.

3 As soon as the present Protocol enters into force, a certified true copy thereof shall be transmitted by the Depositary to the Secretariat of the United Nations for registration and publication in accordance with Article 102 of the Charter of the United Nations.

Article 9

Languages

The present Protocol is established in a single copy in the Arabic, Chinese, English, French, Russian and Spanish languages, each text being equally authentic.

IN WITNESS WHEREOF the undersigned, being duly authorized by their respective Governments for that purpose, have signed the present Protocol.

DONE at London this twenty-sixth day of September, one thousand nine hundred and ninety-seven.

ANNEX

ADDITION OF ANNEX VI TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO

The following new Annex VI is added after the existing Annex V:

"ANNEX VI
REGULATIONS FOR THE PREVENTION OF AIR POLLUTION FROM SHIPS

CHAPTER I – GENERAL

REGULATION 1

Application

The provisions of this Annex shall apply to all ships, except where expressly provided otherwise in Regulations 3, 5, 6, 13, 15, 18 and 19 of this Annex.

3 Odpoved začne veljati dvanajst mesecev po tem, ko je generalni sekretar prejel uradno obvestilo o odpovedi, ali po poteku katerega koli daljšega obdobja, ki je lahko navedeno v uradnem obvestilu.

4 Odpoved Protokola iz leta 1978 v skladu z njegovim VII. členom se šteje, da vključuje odpoved tega protokola v skladu s tem členom. Taka odpoved začne učinkovati z dnem, ko odpoved Protokola iz leta 1978 začne učinkovati v skladu z njegovim VII. členom.

8. člen

Depozitar

1 Ta protokol se deponira pri generalnem sekretarju (v nadaljevanju »depozitar«).

2 Depozitar

(a) obvesti vse države, ki so podpisale ta protokol ali pristopile k njemu, o:

(i) vsakem novem podpisu ali deponiranju listine o ratifikaciji, sprejetju, odobritvi ali pristopu in njenem datumu;

(ii) datumu začetka veljavnosti tega protokola in

(iii) deponiranju katere koli listine o odpovedi tega protokola in datumu njenega prejema ter datumu, ko odpoved začne učinkovati, in

(b) pošlje overjene kopije tega protokola vsem državam, ki so ta protokol podpisale ali pristopile k njemu.

3 Takoj ko ta protokol začne veljati, depozitar pošlje sekretariatu Združenih narodov overjeno kopijo protokola zaradi registracije in objave v skladu s 102. členom Ustanovne listine Združenih narodov.

9. člen

Jeziki

Ta protokol je sestavljen v enem samem izvodu v angleškem, arabskem, francoskem, kitajskem, ruskem in španskem jeziku, pri čemer so vsa besedila enako verodostojna.

V POTRDITEV TEGA so podpisani, ki so jih njihove vlade za to pravilno pooblastile, podpisali ta protokol.

SESTAVLJENO V LONDONU šestindvajsetega septembra tisoč devetsto sedemindevetdeset.

PRILOGA

DODANA PRILOGA VI K MEDNARODNI KONVENCIJI O PREPREČEVANJU ONESNAŽEVANJA MORJA Z LADIJ, 1973, KOT JE SPREMENJENA S PROTOKOLOM IZ LETA 1978, KI SE NANAŠA NANJO

Za Prilogo V se doda nova Priloga VI:

»PRILOGA VI
PRAVILA ZA PREPREČEVANJE ONESNAŽEVANJA ZRAKA Z LADIJ

I. POGLAVJE – SPLOŠNO

1. PRAVILO

Uporaba

Določbe te priloge veljajo za vse ladje, razen če to ni izrecno drugače določeno v 3., 5., 6., 13., 15., 18. in 19. pravilu te priloge.

REGULATION 2
Definitions

For the purpose of this Annex:

(1) "A similar stage of construction" means the stage at which:

(a) construction identifiable with a specific ship begins; and

(b) assembly of that ship has commenced comprising at least 50 tonnes or one percent of the estimated mass of all structural material, whichever is less.

(2) "Continuous feeding" is defined as the process whereby waste is fed into a combustion chamber without human assistance while the incinerator is in normal operating conditions with the combustion chamber operative temperature between 850 °C and 1200 °C.

(3) "Emission" means any release of substances, subject to control by this Annex from ships into the atmosphere or sea.

(4) "New installations", in relation to Regulation 12 of this Annex, means the installation of systems, equipment, including new portable fire extinguishing units, insulation, or other material on a ship after the date on which this Annex enters into force, but excludes repair or recharge of previously installed systems, equipment, insulation, or other material, or recharge of portable fire extinguishing units.

(5) "NOx Technical Code" means the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines adopted by Conference Resolution 2, as may be amended by the Organization, provided that such amendments are adopted and brought into force in accordance with the provisions of Article 16 of the present Convention concerning amendment procedures applicable to an appendix to an Annex.

(6) "Ozone depleting substances" means controlled substances defined in paragraph 4 of Article 1 of the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, listed in Annexes A, B, C or E to the said Protocol in force at the time of application or interpretation of this Annex.

"Ozone depleting substances" that may be found on board ship include, but are not limited to:

Halon 1211 Bromochlorodifluoromethane

Halon 1301 Bromotrifluoromethane

Halon 2402 1,2-Dibromo-1,1,2,2-tetrafluoroethane (also known as Halon 114B2)

CFC-11 Trichlorofluoromethane

CFC-12 Dichlorodifluoromethane

CFC-113 1,1,2-Trichloro-1,2,2-trifluoroethane

CFC-114 1,2-Dichloro-1,1,2,2-tetrafluoroethane

CFC-115 Chloropentafluoroethane

(7) "Sludge oil" means sludge from the fuel or lubricating oil separators, waste lubricating oil from main or auxiliary machinery, or waste oil from bilge water separators, oil filtering equipment or drip trays.

(8) "Shipboard incineration" means the incineration of wastes or other matter on board a ship, if such wastes or other matter were generated during the normal operation of that ship.

(9) "Shipboard incinerator" means a shipboard facility designed for the primary purpose of incineration.

(10) "Ships constructed" means ships the keels of which are laid or which are at a similar stage of construction.

(11) "SOx Emission Control Area" means an area where the adoption of special mandatory measures for SOx emissions from ships is required to prevent, reduce and control air pollution from SOx and its attendant adverse impacts on land and sea areas. SOx Emission Control Areas shall include those listed in Regulation 14 of this Annex.

(12) "Tanker" means an oil tanker as defined in Regulation 1(4) of Annex I or a chemical tanker as defined in Regulation 1(1) of Annex II of the present Convention.

2. PRAVILO
Pomen izrazov

V tej prilogi:

(1) »podobna faza gradnje« pomeni fazo, pri kateri:

(a) je mogoče prepoznati začetek gradnje določene ladje;

(b) je začeta montaža te ladje, ki obsega vsaj 50 ton ali en odstotek ocenjene mase vsega gradbenega materiala, pri čemer se upošteva manjša od obeh vrednosti;

(2) »neprekinjeno polnjenje« je opredeljeno kot proces, pri katerem se odpadki brez človekove pomoči dovajajo v zgorevalno komoro, medtem ko ima sežigalna peč v običajnih pogojih delovanja temperaturo zgorevalne komore med 850 ºC in 1200 ºC;

(3) »emisija« pomeni izpust snovi, ki se nadzoruje po tej prilogi, z ladij v ozračje ali morje;

(4) »nove naprave« glede na 12. pravilo te priloge pomenijo namestitev sistemov, opreme, vključno z novimi prenosnimi gasilnimi aparati, izolacije ali drugega materiala na ladji po datumu, ko ta priloga začne veljati, izključuje pa popravilo ali obnovo že nameščenih sistemov, opreme, izolacije ali drugega materiala ali novo polnjenje gasilnih aparatov;

(5) »Tehnični kodeks NOx« pomeni Tehnični kodeks za nadzor nad emisijami dušikovih oksidov iz ladijskih dizelskih motorjev, ki je bil sprejet z Resolucijo 2 konference in ga Organizacija lahko spremeni pod pogojem, da so te spremembe sprejete in začnejo veljati v skladu s 16. členom te konvencije, ki se nanaša na postopek spreminjanja, veljaven za dodatek k prilogi;

(6) »snovi, ki tanjšajo ozonski plašč«, pomenijo nadzorovane snovi, opredeljene v četrtem odstavku 1. člena Montrealskega protokola o substancah, ki škodljivo delujejo na ozonski plašč, 1987, naštete v prilogah A, B, C ali E k omenjenemu protokolu, veljavnem med uporabo ali razlago te priloge.

Med snovmi, ki tanjšajo ozonski plašč, so lahko na ladji med drugim:

halon 1211 bromoklorodifluorometan

halon 1301 bromotrifluorometan

halon 2402 1,2-dibromo-1,1,2,2-tetrafluoroetan (znan tudi kot halon 114B2)

CFC-11 triklorofluorometan

CFC-12 diklorodifluorometan

CFC-113 1,1,2-trikloro-1,2,2-tetrafluoroetan

CFC-114 1,2-dikloro-1,1,2,2-tetrafluoroetan

CFC-115 kloropentafluoroetan;

(7) »oljna gošča« pomeni gosto usedlino iz separatorjev za gorivo ali mazalno olje, odpadno mazalno olje iz glavnih ali pomožnih strojev ali odpadno olje iz separatorjev ladijske kalužne vode, opreme za filtriranje olj ali odcejalnikov;

(8) »sežiganje na ladji« pomeni sežiganje odpadkov ali drugih snovi na ladji, če so ti odpadki ali druge snovi nastali med običajnim delovanjem te ladje;

(9) »ladijska sežigalna peč« pomeni ladijsko napravo, ki je namenjena predvsem sežiganju;

(10) »zgrajene ladje« pomenijo ladje, katerih gredlji so že bili položeni, ali ladje, ki so v podobni fazi gradnje;

(11) »območje nadzora nad emisijami SOx« pomeni območje, na katerem se za emisije SOx z ladij zahteva sprejetje posebnih obveznih ukrepov za preprečevanje, zmanjševanje in nadziranje onesnaževanja zraka z SOx in njegovimi spremljajočimi škodljivimi učinki na območja na kopnem in morju. Območja nadzora nad emisijami SOx vključujejo nadzor nad emisijami, naštetimi v 14. pravilu te priloge;

(12) »tanker« pomeni tanker za prevoz nafte, ki je opredeljen v četrtem odstavku 1. pravila Priloge I, ali tanker za prevoz kemikalij, ki je opredeljen v prvem odstavku 1. pravila Priloge II te konvencije;

(13) "The Protocol of 1997" means the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocol of 1978 relating thereto.

REGULATION 3
General Exceptions

Regulations of this Annex shall not apply to:

(a) any emission necessary for the purpose of securing the safety of a ship or saving life at sea; or

(b) any emission resulting from damage to a ship or its equipment:

(i) provided that all reasonable precautions have been taken after the occurrence of the damage or discovery of the emission for the purpose of preventing or minimizing the emission; and

(ii) except if the owner or the master acted either with intent to cause damage, or recklessly and with knowledge that damage would probably result.

REGULATION 4
Equivalents

(1) The Administration may allow any fitting, material, appliance or apparatus to be fitted in a ship as an alternative to that required by this Annex if such fitting, material, appliance or apparatus is at least as effective as that required by this Annex.

(2) The Administration which allows a fitting, material, appliance or apparatus as an alternative to that required by this Annex shall communicate to the Organization for circulation to the Parties to the present Convention particulars thereof, for their information and appropriate action, if any.

CHAPTER II – SURVEY, CERTIFICATION AND MEANS OF CONTROL

REGULATION 5
Surveys and Inspections

(1) Every ship of 400 gross tonnage or above and every fixed and floating drilling rig and other platforms shall be subject to the surveys specified below:

(a) an initial survey before the ship is put into service or before the certificate required under Regulation 6 of this Annex is issued for the first time. This survey shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with the applicable requirements of this Annex;

(b) periodical surveys at intervals specified by the Administration, but not exceeding five years, which shall be such as to ensure that the equipment, systems, fittings, arrangements and material fully comply with the requirements of this Annex; and

(c) a minimum of one intermediate survey during the period of validity of the certificate which shall be such as to ensure that the equipment and arrangements fully comply with the requirements of this Annex and are in good working order. In cases where only one such intermediate survey is carried out in a single certificate validity period, and where the period of the certificate exceeds 2 ½ years, it shall be held within six months before or after the halfway date of the certificate's period of validity. Such intermediate surveys shall be endorsed on the certificate issued under Regulation 6 of this Annex.

(2) In the case of ships of less than 400 gross tonnage, the Administration may establish appropriate measures in order to ensure that the applicable provisions of this Annex are complied with.

(13) »Protokol iz leta 1997« pomeni Protokol iz leta 1997 o spremembi Mednarodne konvencije o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo.

3. PRAVILO
Splošne izjeme

Pravila te priloge ne veljajo za:

(a) emisije, ki so potrebne za zagotavljanje varnosti ladje ali reševanje življenja na morju, ali

(b) emisije, ki so posledica poškodbe ladje ali njene opreme:

(i) pod pogojem, da so bili po nastali poškodbi ali odkritju emisije sprejeti vsi primerni previdnostni ukrepi za preprečitev ali kar največje zmanjšanje emisije, in

(ii) razen če je lastnik ali poveljnik ladje z ravnanjem namerno povzročil škodo ali ravnal malomarno in vedoč, da bo do poškodbe ladje verjetno prišlo.

4. PRAVILO
Ustrezniki

(1) Uprava lahko dovoli, da se na ladji namestijo napeljava, material, naprava ali aparat kot alternativa tistemu, kar se zahteva po tej prilogi, če so ta napeljava, material, naprava ali aparat vsaj tako učinkoviti, kot je tisto, kar se zahteva po tej prilogi.

(2) Uprava, ki dovoli napeljavo, material, napravo ali aparat kot alternativo tistemu, kar se zahteva po tej prilogi, sporoči Organizaciji podatke o tem, da jih pogodbenicam te konvencije razpošlje v vednost in morebitno ustrezno ukrepanje.

II. POGLAVJE – PREGLED, IZDAJANJE SPRIČEVAL IN NAČINI NADZORA

5. PRAVILO
Pregled in inšpekcijski nadzor

(1) Vsaka ladja z bruto tonažo 400 ali več in vsaka pritrjena ali plavajoča vrtalna ploščad in druge ploščadi se morajo pregledovati, kot je določeno spodaj:

(a) prvi pregled, preden ladja začne pluti ali je prvič izdano spričevalo, ki se zahteva po 6. pravilu te priloge. S tem pregledom se zagotovi, da so oprema, sistemi, napeljave, postopki in material popolnoma skladni z zahtevami te priloge;

(b) redni pregledi v časovnih presledkih, ki jih določi uprava, vendar ne daljših od pet let, s katerim se zagotovi, da so oprema, sistemi, napeljave, postopki in material popolnoma skladni z zahtevami te priloge, in

(c) vsaj en vmesni pregled v obdobju veljavnosti spričevala, s katerim se zagotovi, da so oprema in postopki popolnoma skladni z zahtevami te priloge in brezhibno delujejo. Če je v obdobju veljavnosti enotnega spričevala opravljen samo en tak vmesni pregled in je tako obdobje spričevala daljše od 2,5 leta, se pregled opravi v šestih mesecih pred ali po polovici roka veljavnosti spričevala. Taki vmesni pregledi se zaznamujejo na hrbtni strani spričevala, izdanega po 6. pravilu te priloge.

(2) Za ladje z bruto tonažo manj kot 400 uprava lahko uvede ustrezne ukrepe, da zagotovi skladnost z veljavnimi določbami te priloge.

(3) Surveys of ships as regards the enforcement of the provisions of this Annex shall be carried out by officers of the Administration. The Administration may, however, entrust the surveys either to surveyors nominated for the purpose or to organizations recognized by it. Such organizations shall comply with the guidelines adopted by the Organization. In every case the Administration concerned shall fully guarantee the completeness and efficiency of the survey.

(4) The survey of engines and equipment for compliance with Regulation 13 of this Annex shall be conducted in accordance with the NOx Technical Code.

(5) The Administration shall institute arrangements for unscheduled inspections to be carried out during the period of validity of the certificate. Such inspections shall ensure that the equipment remains in all respects satisfactory for the service for which the equipment is intended. These inspections may be carried out by their own inspection service, nominated surveyors, recognized organizations, or by other Parties upon request of the Administration. Where the Administration, under the provisions of paragraph (1) of this Regulation, establishes mandatory annual surveys, the above unscheduled inspections shall not be obligatory.

(6) When a nominated surveyor or recognized organization determines that the condition of the equipment does not correspond substantially with the particulars of the certificate, they shall ensure that corrective action is taken and shall in due course notify the Administration. If such corrective action is not taken, the certificate should be withdrawn by the Administration. If the ship is in a port of another Party, the appropriate authorities of the port State shall also be notified immediately. When an officer of the Administration, a nominated surveyor or recognized organization has notified the appropriate authorities of the port State, the Government of the port State concerned shall give such officer, surveyor or organization any necessary assistance to carry out their obligations under this Regulation.

(7) The equipment shall be maintained to conform with the provisions of this Annex and no changes shall be made in the equipment, systems, fittings, arrangements, or material covered by the survey, without the express approval of the Administration. The direct replacement of such equipment and fittings with equipment and fittings that conform with the provisions of this Annex is permitted.

(8) Whenever an accident occurs to a ship or a defect is discovered, which substantially affects the efficiency or completeness of its equipment covered by this Annex, the master or owner of the ship shall report at the earliest opportunity to the Administration, a nominated surveyor, or recognized organization responsible for issuing the relevant certificate.

REGULATION 6
Issue of International Air Pollution Prevention Certificate

(1) An International Air Pollution Prevention Certificate shall be issued, after survey in accordance with the provisions of Regulation 5 of this Annex, to:

(a) any ship of 400 gross tonnage or above engaged in voyages to ports or offshore terminals under the jurisdiction of other Parties; and

(b) platforms and drilling rigs engaged in voyages to waters under the sovereignty or jurisdiction of other Parties to the Protocol of 1997.

(2) Ships constructed before the date of entry into force of the Protocol of 1997 shall be issued with an International Air Pollution Prevention Certificate in accordance with paragraph (1) of this Regulation no later than the first scheduled drydocking after entry into force of the Protocol of 1997, but in no case later than 3 years after entry into force of the Protocol of 1997.

(3) Such certificate shall be issued either by the Administration or by any person or organization duly authorized by it. In every case the Administration assumes full responsibility for the certificate.

(3) Preglede ladij glede izvajanja določb te priloge opravljajo uradniki uprave. Uprava pa lahko preglede zaupa bodisi nadzornikom, imenovanim v ta namen, bodisi pooblaščenim organizacijam. Te organizacije spoštujejo navodila, ki jih je sprejela Organizacija. V vsakem primeru zadevna uprava v celoti jamči za popolnost in učinkovitost pregleda.

(4) Pregled skladnosti motorjev in opreme s 13. pravilom iz te priloge se opravi v skladu s Tehničnim kodeksom NOx.

(5) Uprava vzpostavi režim nenačrtovanega inšpekcijskega nadzora, ki se opravi med veljavnostjo spričevala. S tem nadzorom se zagotovi, da oprema v vseh pogledih izpolnjuje zahteve delovanja, za katero je namenjena. Tak nadzor lahko opravljajo notranja inšpekcijska služba, imenovani nadzornik, pooblaščene organizacije ali druge pogodbenice na zahtevo uprave. Če uprava na podlagi določb prvega odstavka tega pravila uvede obvezne letne preglede, zgornji nenačrtovani nadzor ni obvezen.

(6) Kadar imenovani nadzornik ali pooblaščena organizacija ugotovi, da stanje opreme bistveno ne ustreza podatkom v spričevalu, zagotovi, da se sprejmejo korektivni ukrepi, in o tem pravočasno obvesti upravo. Če taki korektivni ukrepi niso bili sprejeti, mora uprava spričevalo preklicati. Če je ladja v pristanišču druge pogodbenice, morajo biti o tem takoj obveščeni tudi pristojni organi države pristanišča. Ko uradnik uprave, imenovani nadzornik ali pooblaščena organizacija o tem obvesti pristojne organe države pristanišča, zagotovi vlada zadevne države pristanišča takemu uradniku, nadzorniku ali organizaciji vso potrebno pomoč pri izpolnitvi obveznosti po tem pravilu.

(7) Oprema se vzdržuje skladno z določbami te priloge; na opremi, sistemih, napeljavah, postopkih ali materialu, ki se pregledujejo, se brez izrecne odobritve uprave ne smejo uvajati spremembe. Dovoljena je neposredna nadomestitev opreme in napeljav z opremo in napeljavami, ki so v skladu z določbami te priloge.

(8) Kadar koli se ladji pripeti nesreča ali je na njej odkrita okvara, ki bistveno vpliva na učinkovitost ali brezhibnost delovanja njene opreme, ki jo zajema ta priloga, mora poveljnik ali lastnik to nemudoma prijaviti upravi, imenovanemu nadzorniku ali pooblaščeni organizaciji, odgovorni za izdajo ustreznega spričevala.

6. PRAVILO
Izdaja Mednarodnega spričevala o preprečevanju onesnaževanja zraka

(1) Mednarodno spričevalo o preprečevanju onesnaževanja zraka se po pregledu, opravljenem v skladu z določbami 5. pravila te priloge, izda:

(a) vsaki ladji z bruto tonažo 400 ali več, ki plove v pristanišča ali do predobalnih terminalov pod jurisdikcijo drugih pogodbenic, in

(b) ploščadi in vrtalnim ploščadim, ki plove v vode pod suverenostjo ali jurisdikcijo drugih pogodbenic Protokola iz leta 1997.

(2) Ladjam, zgrajenim pred datumom začetka veljavnosti Protokola iz leta 1997, se Mednarodno spričevalo o preprečevanju onesnaževanja zraka v skladu s prvim odstavkom tega pravila izda najpozneje ob prvem načrtovanem popravilu v doku po začetku veljavnosti Protokola iz leta 1997, v nobenem primeru pa ne pozneje kot tri leta po začetku veljavnosti Protokola iz leta 1997.

(3) Tako spričevalo izda bodisi uprava bodisi oseba ali organizacija, ki jo uprava pooblasti. V vsakem primeru uprava za spričevalo prevzame vso odgovornost.

REGULATION 7
Issue of a Certificate by another Government

(1) The Government of a Party to the Protocol of 1997 may, at the request of the Administration, cause a ship to be surveyed and, if satisfied that the provisions of this Annex are complied with, issue or authorize the issuance of an International Air Pollution Prevention Certificate to the ship in accordance with this Annex.

(2) A copy of the certificate and a copy of the survey report shall be transmitted as soon as possible to the requesting Administration.

(3) A certificate so issued shall contain a statement to the effect that it has been issued at the request of the Administration and it shall have the same force and receive the same recognition as a certificate issued under Regulation 6 of this Annex.

(4) No International Air Pollution Prevention Certificate shall be issued to a ship which is entitled to fly the flag of a State which is not a Party to the protocol of 1997.

7. PRAVILO
Spričevalo, ki ga izda druga vlada

(1) Vlada pogodbenice Protokola iz leta 1997 lahko na zahtevo uprave sproži pregled ladje, in če se prepriča, da so bile določbe te priloge spoštovane, ladji v skladu s to prilogo izda Mednarodno spričevalo o preprečevanju onesnaževanja zraka ali odobri njegovo izdajo.

(2) Izvod spričevala in izvod poročila o pregledu se čim prej pošljeta upravi, ki je zahtevala pregled ladje.

(3) Tako izdano spričevalo vsebuje izjavo, da je bilo izdano na zahtevo uprave, in ima enako veljavo kot spričevalo, izdano na podlagi 6. pravila te priloge.

(4) Ladji, ki ima pravico pluti pod zastavo države, ki ni pogodbenica Protokola iz leta 1997, se ne izda Mednarodno spričevalo o preprečevanju onesnaževanja zraka.

REGULATION 8
Form of Certificate

The International Air Pollution Prevention Certificate shall be drawn up in an official language of the issuing country in the form corresponding to the model given in Appendix I to this Annex. If the language used is not English, French or Spanish, the text shall include a translation into one of these languages.

8. PRAVILO
Oblika spričevala

Mednarodno spričevalo o preprečevanju onesnaževanja zraka je sestavljeno v uradnem jeziku države izdajateljice v obliki, ki ustreza obrazcu iz Dodatka I k tej prilogi. Če uporabljeni jezik ni angleški, francoski ali španski, mora besedilo vključevati prevod v enega od teh jezikov.

REGULATION 9
Duration and Validity of Certificate

(1) An International Air Pollution Prevention Certificate shall be issued for a period specified by the Administration, which shall not exceed five years from the date of issue.

(2) No extension of the five-year period of validity of the International Air Pollution Prevention Certificate shall be permitted, except in accordance with paragraph (3).

(3) If the ship, at the time when the International Air Pollution Prevention Certificate expires, is not in a port of the State whose flag it is entitled to fly or in which it is to be surveyed, the Administration may extend the certificate for a period of no more than 5 months. Such extension shall be granted only for the purpose of allowing the ship to complete its voyage to the State whose flag it is entitled to fly or in which it is to be surveyed, and then only in cases where it appears proper and reasonable to do so. After arrival in the State whose flag it is entitled to fly or in which it is to be surveyed, the ship shall not be entitled by virtue of such extension to leave the port or State without having obtained a new International Air Pollution Prevention Certificate.

(4) An International Air Pollution Prevention Certificate shall cease to be valid in any of the following circumstances:

(a) if the inspections and surveys are not carried out within the periods specified under regulation 5 of this Annex;

(b) if significant alterations have taken place to the equipment, systems, fittings, arrangements or material to which this Annex applies without the express approval of the Administration, except the direct replacement of such equipment or fittings with equipment or fittings that conform with the requirements of this Annex. For the purpose of Regulation 13, significant alteration shall include any change or adjustment to the system, fittings, or arrangement of a diesel engine which results in the nitrogen oxide limits applied to that engine no longer being complied with; or

9. PRAVILO
Trajanje in veljavnost spričevala

(1) Mednarodno spričevalo o preprečevanju onesnaževanja zraka se izda za obdobje, ki ga določi uprava in ne presega pet let od datuma izdaje.

(2) Petletnega obdobja veljavnosti Mednarodnega spričevala o preprečevanju onesnaževanja zraka ni dovoljeno podaljšati, razen v skladu s tretjim odstavkom.

(3) Če ladja v času, ko Mednarodno spričevalo o preprečevanju onesnaževanja zraka poteče, ni v pristanišču države, pod katere zastavo ima pravico pluti ali v kateri se opravi pregled, lahko uprava veljavnost spričevala podaljša za največ pet mesecev. Tako podaljšanje je odobreno samo z namenom, da lahko ladja priplove v državo, pod katere zastavo ima pravico pluti ali v kateri se bo opravil pregled, in to samo v primerih, ko se to zdi ustrezno in smotrno. Po prihodu v državo, pod katere zastavo ima pravico pluti ali v kateri bo opravljen pregled, ladja nima pravice, da bi na podlagi takega podaljšanja zapustila pristanišče ali državo, ne da bi pridobila novo Mednarodno spričevalo o preprečevanju onesnaževanja zraka.

(4) Mednarodno spričevalo o preprečevanju onesnaževanja zraka preneha veljati v kateri koli od naslednjih okoliščin:

(a) če inšpekcijski nadzor in pregled nista opravljena v rokih, določenih po 5. pravilu te priloge;

(b) če so bile na opremi, sistemih, napeljavah, postopkih ali materialu, na katere se nanaša ta priloga, brez izrecne odobritve uprave uvedene bistvene spremembe, razen neposredne nadomestitve take opreme ali napeljav z opremo ali napeljavami, ki izpolnjujejo zahteve te priloge. Za namen 13. pravila bistvena sprememba vključuje vsakršno spreminjanje ali prilagajanje sistemov, napeljav ali postopkov pri dizelskem motorju, katerega posledica bi bila preseganje omejitve dušikovih oksidov za ta motor, ali

(c) upon transfer of the ship to the flag of another State. A new certificate shall be issued only when the Government issuing the new certificate is fully satisfied that the ship is in full compliance with the requirements of Regulation 5 of this Annex. In the case of a transfer between Parties, if requested within three months after the transfer has taken place, the Government of the Party whose flag the ship was formerly entitled to fly shall, as soon as possible, transmit to the Administration of the other Party a copy of the International Air Pollution Prevention Certificate carried by the ship before the transfer and, if available, copies of the relevant survey reports.

REGULATION 10
Port State Control on Operational Requirements

(1) A ship, when in a port or an offshore terminal under the jurisdiction of another Party to the Protocol of 1997, is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex, where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of air pollution from ships.

(2) In the circumstances given in paragraph (1) of this Regulation, the Party shall take such steps as will ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.

(3) Procedures relating to the port State control prescribed in Article 5 of the present Convention shall apply to this Regulation.

(4) Nothing in this Regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.

REGULATION 11
Detection of Violations and Enforcement

(1) Parties to this Annex shall cooperate in the detection of violations and the enforcement of the provisions of this Annex, using all appropriate and practicable measures of detection and environmental monitoring, adequate procedures for reporting and accumulation of evidence.

(2) A ship to which the present Annex applies may, in any port or offshore terminal of a Party, be subject to inspection by officers appointed or authorized by that Party for the purpose of verifying whether the ship has emitted any of the substances covered by this Annex in violation of the provisions of this Annex. If an inspection indicates a violation of this Annex, a report shall be forwarded to the Administration for any appropriate action.

(3) Any Party shall furnish to the Administration evidence, if any, that the ship has emitted any of the substances covered by this Annex in violation of the provisions of this Annex. If it is practicable to do so, the competent authority of the former Party shall notify the master of the ship of the alleged violation.

(4) Upon receiving such evidence, the Administration so informed shall investigate the matter, and may request the other Party to furnish further or better evidence of the alleged contravention. If the Administration is satisfied that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such proceedings to be taken in accordance with its law as soon as possible. The Administration shall promptly inform the Party which has reported the alleged violation, as well as the Organization, of the action taken.

(5) A Party may also inspect a ship to which this Annex applies when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party together with sufficient evidence that the ship has emitted any of the substances covered by the Annex in any place in violation of this Annex. The report of such investigation shall be sent to the Party requesting it and to the Administration so that the appropriate action may be taken under the present Convention.

(c) po prepisu ladje pod zastavo druge države. Novo spričevalo se izda šele, ko se vlada, ki izda novo spričevalo, popolnoma prepriča, da ladja v celoti izpolnjuje zahteve iz 5. pravila te priloge. Če se v treh mesecih po prepisu med pogodbenicama to zahteva, mora vlada pogodbenice, pod katere zastavo je ladja plula, poslati upravi druge pogodbenice izvod Mednarodnega spričevala o preprečevanju onesnaževanja zraka, ki ga je ladja imela pred prepisom, in izvode ustreznih poročil o pregledih, če so na voljo.

10. PRAVILO
Nadzor pomorske inšpekcije nad izpolnjevanjem operativnih zahtev

(1) Ko je ladja v pristanišču ali predobalnem terminalu pod jurisdikcijo druge pogodbenice Protokola iz leta 1997, lahko inšpektorji, ki jih je ta pogodbenica pravilno pooblastila, opravijo pregled v zvezi z operativnimi zahtevami po tej prilogi, kadar obstajajo jasni razlogi za sum, da poveljnik ali posadka ni seznanjena z bistvenimi ladijskimi postopki, ki se nanašajo na preprečevanje onesnaževanja zraka z ladij.

(2) V okoliščinah, navedenih v prvem odstavku tega pravila, pogodbenica naredi vse, da zagotovi, da ladja ne bo plula, dokler se stanje ne uredi v skladu z zahtevami te priloge.

(3) Za to pravilo se uporabljajo postopki v zvezi z nadzorom pomorske inšpekcije, ki je predpisan v 5. členu te konvencije.

(4) Nič v tem pravilu se ne razlaga tako, kot da omejuje pravice in obveznosti pogodbenice, ki opravlja nadzor nad operativnimi zahtevami, ki so v tej konvenciji izrecno določene.

11. PRAVILO
Odkrivanje kršitev in izvajanje

(1) Pogodbenice te priloge sodelujejo pri odkrivanju kršitev in izvajanju določb te priloge ter pri tem uporabljajo vse ustrezne in izvedljive ukrepe za odkrivanje kršitev in okoljsko spremljanje, ustrezne postopke za prijavljanje in zbiranje dokazov.

(2) Ladjo, za katero ta priloga velja, lahko v katerem koli pristanišču ali predobalnem terminalu pogodbenice pregledajo inšpektorji, ki jih je ta pogodbenica imenovala ali pooblastila, da preverijo, ali je ladja oddala v okolje snovi, ki jih ta priloga navaja kot kršitev. Če je ob inšpekcijskem nadzoru ugotovljena kršitev te priloge, se upravi zaradi ustreznega ukrepanja pošlje prijava.

(3) Vsaka pogodbenica upravi predloži morebitno dokazilo o tem, da je ladja oddala v okolje snovi, ki jih ta priloga navaja kot kršitev. Če je to izvedljivo, pristojni organ prve pogodbenice poveljnika ladje obvesti o domnevni kršitvi.

(4) Po prejemu takega dokazila tako obveščena uprava razišče zadevo in lahko od druge pogodbenice, ki jo je obvestila, zahteva nadaljnja ali trdnejša dokazila o domnevni kršitvi. Če se uprava prepriča, da dokazila zadoščajo za uvedbo postopka v zvezi z domnevno kršitvijo, mora čim prej sprožiti postopek v skladu s svojo zakonodajo. Uprava pogodbenico, ki je prijavila domnevno kršitev, in Organizacijo takoj obvesti o sprejetih ukrepih.

(5) Pogodbenica lahko tudi pregleda ladjo, za katero ta priloga velja, ko vstopa v pristanišča ali predobalne terminale pod njeno jurisdikcijo, če od katere koli pogodbenice prejme zahtevo za preiskavo skupaj z zadostnimi dokazili, da je ladja oddala v okolje snovi, ki jih ta priloga navaja kot kršitev. Poročilo o taki preiskavi se pošlje pogodbenici, ki je preiskavo zahtevala, in upravi, da se lahko sprejmejo ustrezni ukrepi po tej konvenciji.

(6) The international law concerning the prevention, reduction and control of pollution of the marine environment from ships, including that law relating to enforcement and safeguards, in force at the time of application or interpretation of this Annex, applies, *mutatis mutandis*, to the rules and standards set forth in this Annex.

CHAPTER III – REQUIREMENTS FOR CONTROL OF EMISSIONS FROM SHIPS

REGULATION 12
Ozone Depleting Substances

(1) Subject to the provisions of Regulation 3, any deliberate emissions of ozone depleting substances shall be prohibited. Deliberate emissions include emissions occurring in the course of maintaining, servicing, repairing or disposing of systems or equipment, except that deliberate emissions do not include minimal releases associated with the recapture or recycling of an ozone depleting substance. Emissions arising from leaks of an ozone depleting substance, whether or not the leaks are deliberate, may be regulated by Parties to the Protocol of 1997.

(2) New installations which contain ozone depleting substances shall be prohibited on all ships, except that new installations containing hydro-chlorofluorocarbons (HCFCs) are permitted until 1 January 2020.

(3) The substances referred to in this Regulation, and equipment containing such substances, shall be delivered to appropriate reception facilities when removed from ships.

REGULATION 13
Nitrogen Oxides (NOx)

(1) (a) This Regulation shall apply to:

(i) each diesel engine with a power output of more than 130 kW which is installed on a ship constructed on or after 1 January 2000; and

(ii) each diesel engine with a power output of more than 130 kW which undergoes a major conversion on or after 1 January 2000.

(b) This Regulation does not apply to:

(i) emergency diesel engines, engines installed in lifeboats and any device or equipment intended to be used solely in case of emergency; and

(ii) engines installed on ships solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly, provided that such engines are subject to an alternative NOx control measure established by the Administration.

(c) Notwithstanding the provisions of subparagraph (a) of this paragraph, the Administration may allow exclusion from the application of this Regulation to any diesel engine which is installed on a ship constructed, or on a ship which undergoes a major conversion, before the date of entry into force of the present Protocol, provided that the ship is solely engaged in voyages to ports or offshore terminals within the State the flag of which the ship is entitled to fly.

(2) (a) For the purpose of this Regulation, "major conversion" means a modification of an engine where:

(i) the engine is replaced by a new engine built on or after 1 January 2000, or

(ii) any substantial modification, as defined in the NOx Technical Code, is made to the engine, or

(iii) the maximum continuous rating of the engine is increased by more than 10%.

(b) The NOx emission resulting from modifications referred to in the subparagraph (a) of this paragraph shall be documented in accordance with the NOx Technical Code for approval by the Administration.

(6) Mednarodno pravo, ki se nanaša na preprečevanje, zmanjševanje in nadziranje onesnaževanja morskega okolja z ladij, vključno z zakonodajo, povezano z izvajanjem in varstvenimi ukrepi, in velja med uporabo ali razlago te priloge, se smiselno uporablja za določbe in standarde, opredeljene v tej prilogi.

III. POGLAVJE – ZAHTEVE ZA NADZOR NAD EMISIJAMI Z LADIJ

12. PRAVILO
Snovi, ki tanjšajo ozonski plašč

(1) Ob upoštevanju 3. pravila je vsaka namerna emisija snovi, ki tanjšajo ozonski plašč, prepovedana. Namerne emisije vključujejo emisije, ki nastanejo med vzdrževanjem, servisiranjem, popravljanjem ali odstranjevanjem sistemov ali opreme, ne vključujejo pa minimalnih izpustov, povezanih z lovljenjem ali recikliranjem snovi, ki tanjšajo ozonski plašč. Emisije, ki so posledica uhajanja ali iztekanja snovi, ki tanjšajo ozonski plašč, pa naj bo to uhajanje ali iztekanje namerno ali nenamerno, lahko urejajo pogodbenice Protokola iz leta 1997.

(2) Nove naprave, ki vsebujejo snovi, ki tanjšajo ozonski plašč, so prepovedane na vseh ladjah, razen novih napeljav z delno halogeniranimi klorofluoroogljikovodiki (HCFC), ki so dovoljene do 1. januarja 2020.

(3) Snovi iz tega pravila in oprema, ki vsebuje take snovi, se po odstranitvi z ladij oddajo v ustrezne prevzemne obrate.

13. PRAVILO
Dušikovi oksidi (NOx)

(1) (a) To pravilo velja za:

(i) vsak dizelski motor z izhodno močjo več kot 130 kW, ki je nameščen na ladji, zgrajeni 1. januarja 2000 ali pozneje, in

(ii) vsak dizelski motor z izhodno močjo več kot 130 kW, ki je bil po 1. januarju 2000 bistveno predelan.

(b) To pravilo ne velja za:

(i) rezervne dizelski motorje, motorje, nameščene v rešilnih čolnih, in za kakršne koli naprave ali opremo, namenjeno zgolj za uporabo v sili, in

(ii) motorje, nameščene na ladjah, ki plovejo samo v vodah pod suverenostjo ali jurisdikcijo države, pod katere zastavo ima ladja pravico pluti, če za te motorje uprava uvede nadomestne kontrolne meritve NOx.

(c) Ne glede na določbe pododstavka (a) tega odstavka uprava lahko dovoli, da se iz uporabe tega pravila izključi vsak dizelski motor, ki je na zgrajeni ladji ali ladji, ki je bila bistveno predelana, nameščen pred datumom začetka veljavnosti tega protokola, če ladja plove samo do pristanišč ali predobalnih terminalov v državi, pod katere zastavo ima ladja pravico pluti.

(2) (a) V tem pravilu izraz »bistvena predelava« pomeni spremembo motorja, pri kateri

(i) se motor zamenja z novim motorjem, konstruiranim 1. januarja 2000 ali po tem datumu, ali

(ii) se motor bistveno spremeni v skladu s Tehničnim kodeksom NOx ali

(iii) se največja nazivna moč motorja poveča za več kot 10%.

(b) Emisija NOx, ki je posledica sprememb iz pododstavka (a) tega odstavka, se dokumentira v skladu s Tehničnim kodeksom NOx, da jo odobri uprava.

(3) (a) Subject to the provision of Regulation 3 of this Annex, the operating of each diesel engine to which this Regulation applies is prohibited, except where the emission of nitrogen oxides (calculated as the total weighted emission of NO_2) from the engine is within the following limits:

(i) 17.0g/kWh when n is less than 130 rpm

(ii) $45.0*n^{(-0.2)}$ g/kWh when n is 130 or more but less than 2000 rpm

(iii) 9.8 g/kWh when n is 2000 rpm or more

where n = rated engine speed (crankshaft revolutions per minute).

When using fuel composed of blends from hydrocarbons derived from petroleum refining, test procedure and measurement methods shall be in accordance with the NOx Technical Code, taking into consideration the Test Cycles and Weighting Factors outlined in Appendix II to this Annex.

(b) Notwithstanding the provisions of subparagraph (a) of this paragraph, the operation of a diesel engine is permitted when:

(i) an exhaust gas cleaning system, approved by the Administration in accordance with the NOx Technical Code, is applied to the engine to reduce onboard NOx emissions at least to the limits specified in subparagraph (a), or

(ii) any other equivalent method, approved by the Administration taking into account relevant guidelines to be developed by the Organization, is applied to reduce onboard NOx emissions at least to the limit specified in subparagraph (a) of this paragraph.

REGULATION 14
Sulphur Oxides (SOx)

General requirements

(1) The sulphur content of any fuel oil used on board ships shall not exceed 4.5% m/m.

(2) The worldwide average sulphur content of residual fuel oil supplied for use on board ships shall be monitored taking into account guidelines to be developed by the Organization.

Requirements within SOx Emission Control Areas

(3) For the purpose of this Regulation, SOx Emission Control Areas shall include:

(a) the Baltic Sea area as defined in Regulation 10(1)(b) of Annex I; and

(b) any other sea area, including port areas, designated by the Organization in accordance with criteria and procedures for designation of SOx Emission Control Areas with respect to the prevention of air pollution from ships contained in Appendix III to this Annex.

(4) While ships are within SOx Emission Control Areas, at least one of the following conditions shall be fulfilled:

(a) the sulphur content of fuel oil used on board ships in a SOx Emission Control Area does not exceed 1.5% m/m;

(b) an exhaust gas cleaning system, approved by the Administration taking into account guidelines to be developed by the Organization, is applied to reduce the total emission of sulphur oxides from ships, including both auxiliary and main propulsion engines, to 6.0 g SOx/kWh or less calculated as the total weight of sulphur dioxide emission. Waste streams from the use of such equipment shall not be discharged into enclosed ports, harbours and estuaries unless it can be thoroughly documented by the ship that such waste streams have no adverse impact on the ecosystems of such enclosed ports, harbours and estuaries, based upon criteria communicated by the authorities of the port State to the Organization. The Organization shall circulate the criteria to all Parties to the Convention; or

(3) (a) Ob upoštevanju 3. pravila te priloge je delovanje vsakega dizelskega motorja, za katerega velja to pravilo, prepovedano, razen kadar emisija dušikovih oksidov iz motorja (izračunana kot skupna ponderirana emisija NO_2) ne presega naslednjih meja:

(i) 17,0 g/kWh, če je *n* manj kot 130 vrt./min.

(ii) $45,0*n^{(-0,2)}$ g/kWh, če je *n* 130 ali več, vendar manj kot 2000 vrt./min.

(iii) 9,8 g/kWh, če je *n* 2000 vrt./min. ali več,

pri čemer je *n* = nazivna hitrost motorja (vrtljaji ročične gredi na minuto).

Kadar se uporablja gorivo, sestavljeno iz mešanic ogljikovodikov, pridobljenih iz predelave nafte, morata postopek preizkušanja in metoda merjenja ustrezati Tehničnemu kodeksu NOx in upoštevati cikluse preizkušanja in ponderacijske koeficiente, opisane v Dodatku II k tej prilogi.

(b) Ne glede na določbe pododstavka (a) tega odstavka je delovanje dizelskega motorja dovoljeno, kadar:

(i) se na motorju uporablja sistem čiščenja izpušnih plinov, ki ga uprava odobri v skladu s Tehničnim kodeksom NOx, da se ladijske emisije NOx zmanjšajo vsaj do meja, določenih v pododstavku (a), ali

(ii) se uporablja neka druga enakovredna metoda, ki jo odobri uprava in pri kateri se upoštevajo ustrezna navodila Organizacije za zmanjšanje ladijskih emisij NOx vsaj do meja, določenih v pododstavku (a) tega odstavka.

14. PRAVILO
Žveplovi oksidi (SOx)

Splošne zahteve

(1) Vsebnost žvepla v vsakem gorivu na ladjah ne sme presegati 4,5% m/m.

(2) Svetovno povprečje vsebnosti žvepla v težkem gorivu, dobavljenem za uporabo na ladjah, se nadzoruje ob upoštevanju navodil, ki jih bo pripravila Organizacija.

Zahteve na območjih nadzora nad emisijami SOx

(3) V tem pravilu območja nadzora nad emisijami SOx vključujejo:

(a) območje Baltskega morja, opredeljeno v pododstavku (b) prvega odstavka 10. pravila, in

(b) vsako drugo morsko območje, zajeto v Dodatku III k tej prilogi, vključno s pristaniškimi območji, ki jih določi Organizacija po merilih in postopkih za označevanje območij nadzora nad emisijami SOx, da se prepreči onesnaževanje zraka z ladij.

(4) Če ladje plovejo na območjih nadzora nad emisijami SOx, mora biti izpolnjen vsaj eden od naslednjih pogojev:

(a) vsebnost žvepla v gorivu, uporabljenem na ladjah na območju nadzora nad emisijami SOx, ne presega 1,5% m/m;

(b) uporablja se sistem čiščenja izpušnih plinov, ki ga odobri uprava ob upoštevanju navodil, ki jih bo pripravila Organizacija, za zmanjšanje skupne emisije žveplovih oksidov z ladij, vključno s pomožnimi in glavnimi pogonskimi motorji, na 6,0 g SOx/kWh ali manj, izračunane kot skupna masa emisije žveplovih oksidov. Odpadni tokovi, ki nastajajo pri uporabi take opreme, se ne smejo izpuščati v zaprta pristanišča, zalive in morske rokave, razen če ladja lahko izčrpno dokumentira, da taki odpadni tokovi ob upoštevanju meril, ki jih organi države pristanišča sporočijo Organizaciji, ne vplivajo negativno na ekosisteme takih zaprtih pristanišč, zalivov in morskih rokavov. Organizacija razpošlje merila vsem pogodbenicam konvencije ali

(c) any other technological method that is verifiable and enforceable to limit SOx emissions to a level equivalent to that described in subparagraph (b) is applied. These methods shall be approved by the Administration taking into account guidelines to be developed by the Organization.

(5) The sulphur content of fuel oil referred to in paragraph (1) and paragraph 4(a) of this Regulation shall be documented by the supplier as required by Regulation 18 of this Annex.

(6) Those ships using separate fuel oils to comply with paragraph (4)(a) of this Regulation shall allow sufficient time for the fuel oil service system to be fully flushed of all fuels exceeding 1.5% m/m sulphur content prior to entry into a SOx Emission Control Area. The volume of low sulphur fuel oils (less than or equal to 1.5% sulphur content) in each tank as well as the date, time and position of the ship when any fuel-changeover operation is completed, shall be recorded in such log-book as prescribed by the Administration.

(7) During the first twelve months immediately following entry into force of the present Protocol, or of an amendment to the present Protocol designating a specific SOx Emission Control Area under paragraph (3)(b) of this Regulation, ships entering a SOx Emission Control Area referred to in paragraph (3)(a) of this Regulation or designated under paragraph (3)(b) of this Regulation are exempted from the requirements in paragraphs (4) and (6) of this Regulation and from the requirements of paragraph (5) of this Regulation insofar as they relate to paragraph (4)(a) of this Regulation.

REGULATION 15
Volatile Organic Compounds

(1) If the emissions of volatile organic compounds (VOCs) from tankers are to be regulated in ports or terminals under the jurisdiction of a Party to the Protocol of 1997, they shall be regulated in accordance with the provisions of this Regulation.

(2) A Party to the Protocol of 1997 which designates ports or terminals under its jurisdiction in which VOCs emissions are to be regulated, shall submit a notification to the Organization. This notification shall include information on the size of tankers to be controlled, on cargoes requiring vapour emission control systems, and the effective date of such control. The notification shall be submitted at least six months before the effective date.

(3) The Government of each Party to the protocol of 1997 which designates ports or terminals at which VOCs emissions from tankers are to be regulated shall ensure that vapour emission control systems, approved by that Government taking into account the safety standards developed by the Organization, are provided in ports and terminals designated, and are operated safely and in a manner so as to avoid undue delay to the ship.

(4) The Organization shall circulate a list of the ports and terminals designated by the Parties to the Protocol of 1997 to other Parties to the Protocol of 1997 and Member States of the Organization for their information.

(5) All tankers which are subject to vapour emission control in accordance with the provisions of paragraph (2) of this Regulation shall be provided with a vapour collection system approved by the Administration taking into account the safety standards developed by the Organization, and shall use such system during the loading of such cargoes. Terminals which have installed vapour emission control systems in accordance with this Regulation may accept existing tankers which are not fitted with vapour collection systems for a period of three years after the effective date identified in paragraph (2).

(6) This Regulation shall only apply to gas carriers when the type of loading and containment systems allow safe retention of non-methane VOCs on board, or their safe return ashore.

(c) uporablja se kakršna koli preverljiva in izvedljiva tehnološka metoda za omejevanje emisij SOx do ravni, enake tisti iz pododstavka (b). Te metode odobri uprava ob upoštevanju navodil, ki jih bo pripravila Organizacija.

(5) Dobavitelj v skladu z zahtevo 18. pravila te priloge dokumentira vsebnost žvepla v gorivu iz prvega odstavka in pododstavka (a) četrtega odstavka tega pravila.

(6) Ladje, ki uporabljajo ločeno gorivo, v skladu s pododstavkom (a) četrtega odstavka tega pravila omogočajo dovolj časa, da se sistem za dovajanje goriva popolnoma očisti vseh goriv, ki presegajo 1,5% m/m vsebnosti žvepla, pred vstopom na območje nadzora nad emisijami SOx. Količina goriva z nizko vsebnostjo žvepla (do 1,5% vsebnosti žvepla) v vsaki cisterni ter datum, ura in položaj ladje ob menjavi energenta se vpisujejo v ladijski dnevnik, ki ga predpiše uprava.

(7) V prvih 12 mesecih takoj po začetku veljavnosti tega protokola ali spremembe tega protokola, ki v skladu s pododstavkom (b) tretjega odstavka tega pravila določa posebno območje nadzora nad emisijami SOx, so ladje, ki vstopajo na območje nadzora nad emisijami SOx, omenjeno v pododstavku (a) tretjega odstavka tega pravila ali določeno po pododstavku (b) tretjega odstavka tega pravila, oproščene zahtev četrtega in šestega odstavka tega pravila ter zahtev petega odstavka tega pravila, če se nanašajo na pododstavek (a) četrtega odstavka tega pravila.

15. PRAVILO
Hlapljive organske spojine

(1) Če emisije hlapljivih organskih spojin (HOS) s tankerjev urejajo pristanišča ali terminali pod jurisdikcijo pogodbenice Protokola iz leta 1997, se urejajo v skladu z določbami tega pravila.

(2) Pogodbenica Protokola iz leta 1997, ki določi pristanišča ali terminale pod svojo jurisdikcijo, v katerih se emisije HOS urejajo s pravili, pošlje Organizaciji uradno obvestilo. To uradno obvestilo vključuje informacije o velikosti tankerjev, ki bodo pod nadzorom, tovoru, za katerega se zahtevajo sistemi nadzora nad emisijami hlapov, in o datumu začetka takega nadzora. Uradno obvestilo se pošlje vsaj šest mesecev pred datumom začetka nadzora.

(3) Vlada vsake pogodbenice Protokola iz leta 1997, ki določi pristanišča ali terminale, v katerih se emisije HOS s tankerjev urejajo s pravili, zagotovi, da bodo v imenovanih pristaniščih in terminalih nameščeni sistemi za nadzor nad emisijami hlapov, ki jih ta vlada odobri ob upoštevanju varnostnih standardov, ki jih pripravi Organizacija, in da bodo ti sistemi delovali varno in tako, da ladja ne bo imela nepotrebne zamude.

(4) Organizacija razpošlje seznam pristanišč in terminalov, ki so jih določile pogodbenice Protokola iz leta 1997, v vednost drugim pogodbenicam Protokola iz leta 1997 in državam članicam Organizacije.

(5) Vsi tankerji, katerih emisije hlapov se nadzorujejo v skladu z določbami drugega odstavka tega pravila, so opremljeni s sistemom za zbiranje hlapov, ki ga odobri uprava ob upoštevanju varnostnih standardov, ki jih pripravi Organizacija, in tak sistem uporabljajo med nakladanjem takega tovora. Terminali, ki imajo sisteme za nadzor nad emisijami hlapov nameščene v skladu s tem pravilom, lahko obstoječe tankerje, ki niso opremljeni s sistemi za zbiranje hlapov, sprejmejo še tri leta po datumu začetka nadzora, ki je določen v drugem odstavku.

(6) To pravilo se za ladje za prevoz plina uporablja samo tedaj, ko vrsta sistema za natovarjanje in zadrževanje tovora omogoča varno hrambo nemetanskih HOS na ladji oziroma njihovo varno vrnitev na obalo.

REGULATION 16
Shipboard Incineration

(1) Except as provided in paragraph (5), shipboard incineration shall be allowed only in a shipboard incinerator.

(2) (a) Except as provided in subparagraph (b) of this paragraph, each incinerator installed on board a ship on or after 1 January 2000 shall meet the requirements contained in Appendix IV to this Annex. Each incinerator shall be approved by the Administration taking into account the standard specifications for shipboard incinerators developed by the Organization.

(b) The Administration may allow exclusion from the application of subparagraph (a) of this paragraph to any incinerator which is installed on board a ship before the date of entry into force of the Protocol of 1997, provided that the ship is solely engaged in voyages within waters subject to the sovereignty or jurisdiction of the State the flag of which the ship is entitled to fly.

(3) Nothing in this Regulation affects the prohibition in, or other requirements of, the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, as amended, and the 1996 Protocol thereto.

(4) Shipboard incineration of the following substances shall be prohibited:

(a) Annex I, II and III cargo residues of the present Convention and related contaminated packing materials;

(b) polychlorinated biphenyls (PCBs);

(c) garbage, as defined in Annex V of the present Convention, containing more than traces of heavy metals; and

(d) refined petroleum products containing halogen compounds.

(5) Shipboard incineration of sewage sludge and sludge oil generated during the normal operation of a ship may also take place in the main or auxiliary power plant or boilers, but in those cases, shall not take place inside ports, harbours and estuaries.

(6) Shipboard incineration of polyvinyl chlorides (PVCs) shall be prohibited, except in shipboard incinerators for which IMO type Approval Certificates have been issued.

(7) All ships with incinerators subject to this Regulation shall possess a manufacturer's operating manual which shall specify how to operate the incinerator within the limits described in paragraph 2 of Appendix IV to this Annex.

(8) Personnel responsible for operation of any incinerator shall be trained and capable of implementing the guidance provided in the manufacturer's operating manual.

(9) Monitoring of combustion flue gas outlet temperature shall be required at all times and waste shall not be fed into a continuous-feed shipboard incinerator when the temperature is below the minimum allowed temperature of 850 °C. For batch-loaded shipboard incinerators, the unit shall be designed so that the temperature in the combustion chamber shall reach 600 °C within 5 minutes after start-up.

(10) Nothing in this Regulation precludes the development, installation and operation of alternative design shipboard thermal waste treatment devices that meet or exceed the requirements of this Regulation.

16. PRAVILO
Sežiganje na ladji

(1) Če ne gre za določbo petega odstavka, je sežiganje na ladji dovoljeno samo v ladijski sežigalni peči.

(1) (a) Če ne gre za določbo pododstavka (b) tega odstavka, mora vsaka sežigalna peč, nameščena na ladji 1. januarja 2000 ali pozneje, izpolnjevati zahteve, ki jih vsebuje Dodatek IV k tej prilogi. Vsako sežigalno peč odobri uprava ob upoštevanju standardnih specifikacij za ladijske sežigalne peči, ki jih pripravi Organizacija.

(b) Uprava lahko dovoli, da za sežigalno peč, ki je nameščena na ladji pred datumom začetka veljavnosti Protokola iz leta 1997, ne velja pododstavek (a) tega odstavka, če ladja plove izključno v vodah pod suverenostjo ali jurisdikcijo države, pod katere zastavo ima ladja pravico pluti.

(3) Nič v tem pravilu ne vpliva na prepoved ali druge zahteve iz Konvencije o preprečevanju onesnaževanja morja z odpadnimi in drugimi snovmi, 1972, kot je bila spremenjena, in Protokola iz leta 1996 k njej.

(4) Na ladjah je prepovedano sežiganje naslednjih snovi:

(a) ostankov tovora po Prilogah I, II in III k tej konvenciji in z njimi povezanega onesnaženega embalažnega materiala,

(b) polikloriranih bifenilov (PCB),

(c) smeti, opredeljenih v Prilogi V k tej konvenciji, ki vsebujejo več kot sledove težkih kovin, in

(d) rafiniranih naftnih proizvodov, ki vsebujejo halogenske spojine.

(5) Gošča odplak in oljne usedline, ki nastajajo med običajnim delovanjem ladje, se lahko na ladji sežigajo tudi v glavnem ali pomožnem generatorju ali ogrevalnih kotlih, vendar se v teh primerih to ne sme izvajati v zaprtih pristaniščih, zalivih in morskih rokavih.

(6) Sežiganje polivinil kloridov (PVC) na ladji je prepovedano, razen v ladijskih sežigalnih pečeh, za katere so bila izdana posamična spričevala o ustreznosti Mednarodne pomorske organizacije.

(7) Vse ladje s sežigalnimi pečmi, ki jih zavezuje to pravilo, imajo priročnik proizvajalca o delovanju, ki natančno določa, kako sežigalno peč upravljati v okviru meja iz drugega odstavka Dodatka IV k tej prilogi.

(8) Osebje, odgovorno za delovanje sežigalnih peči, je usposobljeno in zmožno izvajati navodila, ki jih vsebuje priročnik proizvajalca o delovanju.

(9) Kadar je temperatura nižja od najnižje dovoljene 850 ºC, se zahteva stalno spremljanje izhodne temperature zgorevalnih dimnih plinov, odpadki pa se v kontinuirno sežigalno peč ne dovajajo. Pri šaržnih sežigalnih pečeh je postroj zasnovan tako, da temperatura v zgorevalni komori v petih minutah po zagonu doseže 600 ºC.

(10) Nič v tem pravilu ne vpliva na razvoj, namestitev in delovanje ladijskih naprav za toplotno obdelavo odpadkov, ki so drugačne konstrukcije, če te naprave izpolnjujejo zahteve tega pravila ali jih presegajo.

REGULATION 17
Reception Facilities

(1) The Government of each Party to the Protocol of 1997 undertakes to ensure the provision of facilities adequate to meet the:

(a) needs of ships using its repair ports for the reception of ozone depleting substances and equipment containing such substances when removed from ships;

17. PRAVILO
Prevzemni obrati

(1) Vlada vsake pogodbenice Protokola iz leta 1997 se zavezuje, da bo zagotovila obrate, s katerimi bo zadovoljevala:

(a) potrebe ladij, ki njena remontna pristanišča uporabljajo za prevzem snovi, ki tanjšajo ozonski plašč, in opreme, ki po odstranitvi z ladij vsebuje take snovi;

(b) needs of ships using its ports, terminals or repair ports for the reception of exhaust gas cleaning residues from an approved exhaust gas cleaning system when discharge into the marine environment of these residues is not permitted under Regulation 14 of this Annex;

without causing undue delay to ships, and

(c) needs in ship breaking facilities for the reception of ozone depleting substances and equipment containing such substances when removed from ships.

(2) Each Party to the Protocol of 1997 shall notify the Organization for transmission to the Members of the Organization of all cases where the facilities provided under this Regulation are unavailable or alleged to be inadequate.

REGULATION 18
Fuel Oil Quality

(1) Fuel oil for combustion purposes delivered to and used on board ships to which this Annex applies shall meet the following requirements:

(a) except as provided in subparagraph (b):

(i) the fuel oil shall be blends of hydrocarbons derived from petroleum refining. This shall not preclude the incorporation of small amounts of additives intended to improve some aspects of performance;

(ii) the fuel oil shall be free from inorganic acid;

(iii) the fuel oil shall not include any added substance or chemical waste which either:

(1) jeopardizes the safety of ships or adversely affects the performance of the machinery, or

(2) is harmful to personnel, or

(3) contributes overall to additional air pollution; and

(b) fuel oil for combustion purposes derived by methods other than petroleum refining shall not:

(i) exceed the sulphur content set forth in Regulation 14 of this Annex;

(ii) cause an engine to exceed the NOx emission limits set forth in Regulation 13(3)(a) of this Annex;

(iii) contain inorganic acid; and

(iv) (1) jeopardize the safety of ships or adversely affect the performance of the machinery, or

(2) be harmful to personnel, or

(3) contribute overall to additional air pollution.

(2) This Regulation does not apply to coal in its solid form or nuclear fuels.

(3) For each ship subject to Regulations 5 and 6 of this Annex, details of fuel oil for combustion purposes delivered to and used on board shall be recorded by means of a bunker delivery note which shall contain at least the information specified in Appendix V to this Annex.

(4) The bunker delivery note shall be kept on board the ship in such a place as to be readily available for inspection at all reasonable times. It shall be retained for a period of three years after the fuel oil has been delivered on board.

(5) (a) The competent authority of the Government of a Party to the Protocol of 1997 may inspect the bunker delivery notes on board any ship to which this Annex applies while the ship is in its port or offshore terminal, may make a copy of each delivery note, and may require the master or person in charge of the ship to certify that each copy is a true copy of such bunker delivery note. The competent authority may also verify the contents of each note through consultations with the port where the note was issued.

(b) The inspection of the bunker delivery notes and the taking of certified copies by the competent authority under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

(b) potrebe ladij, ki uporabljajo njena pristanišča, terminale ali remontna pristanišča za prevzem ostankov, nastalih pri čiščenju izpušnih plinov v odobrenih sistemih za čiščenje izpušnih plinov, kadar izpust teh ostankov v morsko okolje ni dovoljen po 14. pravilu te priloge;

ne da bi ladjam povzročala nepotrebne zamude, in

(c) potrebe v obratih za razgradnjo starih ladij, ki prevzemajo snovi, ki tanjšajo ozonski plašč, in opremo, ki vsebuje take snovi, ko je odstranjena z ladij.

(2) Vsaka pogodbenica Protokola iz leta 1997 uradno obvesti Organizacijo, ki to obvestilo pošlje članicam Organizacije, o vseh primerih, ko obrati, ki jih predvideva to pravilo, niso na voljo ali so domnevno neustrezni.

18. PRAVILO
Kakovost goriva

(1) Gorivo za izgorevanje, ki se dostavi na ladje, za katere velja ta priloga, in se tam uporablja, mora izpolnjevati naslednje zahteve:

(a) če ne gre za določbo pododstavka (b):

(i) je gorivo mešanca ogljikovodikov, pridobljeno iz predelave nafte. To ne preprečuje vključevanja majhnih količin aditivov, ki izboljšujejo nekatere vidike zmogljivosti;

(ii) je gorivo brez anorganskih kislin;

(iii) gorivo ne vsebuje nobene dodane snovi ali odpadne kemikalije, ki:

(1) ogroža varnost ladij ali negativno vpliva na zmogljivost strojev ali

(2) je škodljiva za osebje ali

(3) v splošnem prispeva k dodatnemu onesnaževanju zraka, in

(b) gorivo za zgorevanje, pridobljeno s postopki, ki niso predelava nafte,

(i) ne presega vsebnosti žvepla, določene v 14. pravilu te priloge;

(ii) ne povzroči, da bi motor presegel zgornje meje emisij NOx, določene v pododstavku (a) tretjega odstavka 13. pravila te priloge;

(iii) ne vsebuje anorganskih kislin in

(iv) (1) ne ogroža varnosti ladij ali negativno vpliva na zmogljivost strojev ali

(2) ni škodljivo za zdravje osebja ali

(3) v splošnem ne prispeva k dodatnemu onesnaževanju zraka.

(2) To pravilo ne velja za premog v trdnem stanju ali jedrsko gorivo.

(3) Za vsako ladjo, za katero veljata 5. in 6. pravilo te priloge, se podatki o gorivu za zgorevanje, ki se dobavi na ladjo in se tam uporablja, evidentirajo z dobavnico za gorivo, ki vsebuje vsaj informacije iz Dodatka V k tej prilogi.

(4) Dobavnica za gorivo se hrani na ladji in mora biti za inšpekcijski nadzor ob vsakem razumnem času takoj dosegljiva. Hraniti jo je treba tri leta po dobavi goriva na ladjo.

(5) (a) Pristojni organ vlade pogodbenice Protokola iz leta 1997 lahko dobavnice za gorivo na kateri koli ladji, za katero velja ta priloga, inšpekcijsko pregleda, ko je ladja v pristanišču ali predobalnem terminalu te države, vsako dobavnico lahko kopira in od poveljnika ladje ali osebe, odgovorne za ladjo, zahteva overitev kopije vsake take dobavnice. Pristojni organ lahko tudi preveri vsebino vsake dobavnice, in sicer ob posvetu s pristaniščem, kjer je bila dobavnica izdana.

(b) Pristojni organ mora čim prej opraviti inšpekcijski nadzor dobavnic za gorivo po tem odstavku in prevzeti overjene izvode dobavnic, da se ladja po nepotrebnem ne zadržuje.

(6) The bunker delivery note shall be accompanied by a representative sample of the fuel oil delivered taking into account guidelines to be developed by the Organization. The sample is to be sealed and signed by the supplier's representative and the master or officer in charge of the bunker operation on completion of bunkering operations and retained under the ship's control until the fuel oil is substantially consumed, but in any case for a period of not less than twelve months from the time of delivery.

(7) Parties to the Protocol of 1997 undertake to ensure that appropriate authorities designated by them:

(a) maintain a register of local suppliers of fuel oil;

(b) require local suppliers to provide the bunker delivery note and sample as required by this Regulation, certified by the fuel oil supplier that the fuel oil meets the requirements of Regulations 14 and 18 of this Annex;

(c) require local suppliers to retain a copy of the bunker delivery note for at least 3 years for inspection and verification by the port State as necessary;

(d) take action as appropriate against fuel oil suppliers that have been found to deliver fuel oil that does not comply with that stated on the bunker delivery note;

(e) inform the Administration of any ship receiving fuel oil found to be noncompliant with the requirements of Regulations 14 or 18 of this Annex; and

(f) inform the Organization for transmission to Parties to the Protocol of 1997 of all cases where fuel oil suppliers have failed to meet the requirements specified in Regulations 14 or 18 of this Annex.

(8) In connection with port State inspections carried out by Parties to the Protocol of 1997, the Parties further undertake to:

(a) inform the Party or non-Party under whose jurisdiction bunker delivery note was issued of cases of delivery of noncompliant fuel oil, giving all relevant information; and

(b) ensure that remedial action as appropriate is taken to bring noncompliant fuel oil discovered into compliance.

REGULATION 19
Requirements for Platforms and Drilling Rigs

(1) Subject to the provisions of paragraphs (2) and (3) of this Regulation, fixed and floating platforms and drilling rigs shall comply with the requirements of this Annex.

(2) Emissions directly arising from the exploration, exploitation and associated offshore processing of sea-bed mineral resources are, consistent with Article 2(3)(b)(ii) of the present Convention, exempt from the provisions of this Annex. Such emissions include the following:

(a) emissions resulting from the incineration of substances that are solely and directly the result of exploration, exploitation and associated offshore processing of sea-bed mineral resources, including but not limited to the flaring of hydrocarbons and the burning of cuttings, muds and/or stimulation fluids during well completion and testing operations, and flaring arising from upset conditions;

(b) the release of gases of volatile compounds entrained in drilling fluids and cuttings;

(c) emissions associated solely and directly with the treatment, handling, or storage of sea-bed minerals; and

(d) emissions from diesel engines that are solely dedicated to the exploration, exploitation and associated offshore processing of sea-bed mineral resources.

(3) The requirements of Regulation 18 of this Annex shall not apply to the use of hydrocarbons which are produced and subsequently used on site as fuel, when approved by the Administration.

(6) Dobavnici za gorivo je priložen reprezentativni vzorec dobavljenega goriva ob upoštevanju navodil, ki jih pripravi Organizacija. Vzorec mora biti zapečaten in ga morajo po končani oskrbi z gorivom podpisati predstavnik dobavitelja in poveljnik ladje ali častnik, odgovoren za oskrbo z gorivom; vzorec ostane pod nadzorom ladje, dokler večina goriva ni porabljena, v vsakem primeru pa vsaj 12 mesecev po dobavi.

(7) Pogodbenice Protokola iz leta 1997 zagotavljajo, da bodo pristojni organi, ki so jih imenovale:

(a) vodili register lokalnih dobaviteljev goriva;

(b) od lokalnih dobaviteljev zahtevali dobavnice za gorivo in vzorec goriva, ki se zahteva po tem pravilu, s potrdilom dobavitelja goriva, da gorivo izpolnjuje zahteve 14. in 18. pravila te priloge;

(c) od lokalnih dobaviteljev zahtevali, da za morebitne inšpekcijske nadzore in preverjanja, ki jih opravlja država pristanišča, obdržijo izvod dobavnice za gorivo pri sebi vsaj tri leta;

(d) ustrezno ukrepali zoper dobavitelje goriva, za katere je bilo ugotovljeno, da so dobavili gorivo, ki ni enakovredno tistemu, ki je navedeno na dobavnici;

(e) obvestili upravo o vsaki ladji, ki prevzema gorivo, za katero je ugotovljeno, da ni skladno z zahtevami 14. in 18. pravila te priloge, in

(f) obvestili Organizacijo, ta pa vse pogodbenice Protokola iz leta 1997 o vseh primerih, ko dobavitelji goriva niso izpolnili zahtev iz 14. in 18. pravila te priloge.

(8) V zvezi z inšpekcijskimi nadzori v državi pristanišča, ki jih opravljajo pogodbenice Protokola iz leta 1997, se pogodbenice nadalje zavezujejo:

(a) da bodo pogodbenico ali nepogodbenico, pod jurisdikcijo katere je bila izdana dobavnica za gorivo, obvestile o dobavah neustreznega goriva z vsemi ustreznimi podrobnostmi in

(b) da bodo zagotovile sprejetje ustreznih sanacijskih ukrepov, s katerimi se odpravijo ugotovljene pomanjkljivosti neustreznega goriva.

19. PRAVILO
Zahteve za ploščadi in vrtalne ploščadi

(1) Ob upoštevanju določb drugega in tretjega odstavka tega pravila so pritrjene in plavajoče ploščadi in vrtalne ploščadi skladne z zahtevami te priloge.

(2) Emisije, ki neposredno izhajajo iz raziskovanja, izkoriščanja in s tem povezane predelave mineralnih surovin z morskega dna na morju, so v skladu s točko (ii) pododstavka (b) tretjega odstavka 2. člena te konvencije izvzete iz določb te priloge. Take emisije vključujejo:

(a) emisije pri sežiganju snovi, ki so edina in neposredna posledica raziskovanja, izkoriščanja in s tem povezane predelave mineralnih surovin z morskega dna na morju, med drugim s sežiganjem ogljikovodikov in odrezkov, mulja in/ali spodbujevalnih mazalnih tekočin med izdelavo jaškov in operacijami preizkušanja ter sežiganjem odpadkov;

(b) izpust plinov in hlapljivih spojin, ki so v vrtalnih mazalnih tekočinah in odrezkih;

(c) emisije, povezane izključno in neposredno z obdelavo mineralnih surovin z morskega dna, ravnanjem z njimi ali njihovim skladiščenjem, in

(d) emisije iz dizelskih motorjev, namenjenih izključno raziskavam, izkoriščanju in predelavi mineralnih surovin z morskega dna na morju.

(3) Zahteve 18. pravila te priloge se ne nanašajo na uporabo ogljikovodikov, nastalih in nato na kraju samem uporabljenih kot gorivo, kadar to odobri uprava.

APPENDIX I

Form of IAPP Certificate
(Regulation 8)

INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

Issued under the provisions of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 related thereto (hereinafter referred to as "the Convention") under the authority of the Government of:

……..…
(*full designation of the country*)

by ……..…….
(*full designation of the competent person or organization authorized under the provisions of the Convention*)

Name of ship	**Distinctive number or letters**	**IMO number**	**Port of registry**	**Gross tonnage**

Type of ship: □ tanker
□ ships other than a tanker

THIS IS TO CERTIFY:

1. That the ship has been surveyed in accordance with Regulation 5 of Annex VI of the Convention; and

2. That the survey shows that the equipment, systems, fittings, arrangements and materials fully comply with the applicable requirements of Annex VI of the Convention.

This certificate is valid until ……..…….. subject to surveys in accordance with Regulation 5 of Annex VI of the Convention.

Issued at …….....
(*Place of issue of certificate*)

……..... ……..
(*Date of issue*) (*Signature of duly authorized official issuing the certificate*)

(*Seal or stamp of the authority, as appropriate*)

DODATEK I

OBRAZEC SPRIČEVALA IAPP
(8. pravilo)

MEDNARODNO SPRIČEVALO O PREPREČEVANJU ONESNAŽEVANJA ZRAKA

Na podlagi določb Protokola iz leta 1997, ki spreminja Mednarodno konvencijo o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo (v nadaljevanju »konvencija«), s pooblastilom vlade:

……..……..……..…….

(polno ime države)

izdaja: ……..……..……..……...

(poln naziv pristojne osebe ali organizacije, pooblaščene na podlagi določb konvencije)

Ime ladje	**Razlikovalna številka ali črke**	**Številka IMO**	**Pristanišče vpisa**	**Bruto tonaža**

Vrsta ladje: □ tanker
□ ladje, ki niso tankerji

S TEM POTRJUJEMO:

1. da je bila ladja pregledana v skladu s 5. pravilom Priloge VI h konvenciji in

2. da je iz pregleda razvidno, da so oprema, sistemi, napeljave, postopki in material popolnoma skladni z veljavnimi zahtevami Priloge VI konvencije.

To spričevalo velja do …….. pod pogojem, da se opravijo pregledi v skladu s 5. pravilom Priloge VI h konvenciji.

Izdano v ……

(kraj izdaje spričevala)

……..
(datum izdaje)

……
(podpis pooblaščene osebe, ki izdaja spričevalo)

(pečat ali žig organa)

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that at a survey required by Regulation 5 of Annex VI of the Convention the ship was found to comply with the relevant provisions of the Convention:

Annual survey:

Signed ……..
(Signature of duly authorized official)

Place ……..……

Date ……...…

(Seal or stamp of the authority, as appropriate)

Annual*/Intermediate* survey

Signed ……..
(Signature of duly authorized official)

Place ……..……

Date ……...…

(Seal or stamp of the authority, as appropriate)

Annual*/Intermediate* survey:

Signed ……...
(Signature of duly authorized official)

Place ……..……

Date ……...…

(Seal or stamp of the authority, as appropriate)

Annual survey:

Signed ……..
(Signature of duly authorized official)

Place ……..……

Date ……...…

(Seal or stamp of the authority, as appropriate)

* Delete as appropriate

ZAZNAMEK O LETNIH IN VMESNIH PREGLEDIH

S TEM POTRJUJEMO, da je bilo s pregledom, zahtevanim po 5. pravilu Priloge VI h konvenciji, ugotovljeno, da ladja izpolnjuje ustrezne določbe konvencije:

Letni pregled:

Podpisal ……..……..…….
(podpis pooblaščene osebe)

Kraj: ……..……..

Datum ……

(pečat ali žig organa)

Letni*/vmesni* pregled:

Podpisal ……..……..…….
(podpis pooblaščene osebe)

Kraj: ……..……..

Datum ……

(pečat ali žig organa)

Letni*/vmesni* pregled:

Podpisal ……..……..…….
(podpis pooblaščene osebe)

Kraj: ……..……..

Datum ……

(pečat ali žig organa)

Letni pregled:

Podpisal ……..……..…….
(podpis pooblaščene osebe)

Kraj: ……..……..

Datum ……

(pečat ali žig organa)

* Neustrezno prečrtajte.

Supplement to International Air Pollution Prevention Certificate
(IAPP Certificate)

RECORD OF CONSTRUCTION AND EQUIPMENT

In respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention").

Notes:

1 This Record shall be permanently attached to the IAPP Certificate. The IAPP Certificate shall be available on board the ship at all times.
2 If the language of the original Record is not English, French or Spanish, the text shall include a translation into one of these languages.
3 Entries in boxes shall be made by inserting either a cross (x) for the answer "yes" and "applicable" or a (-) for the answers "no" and "not applicable" as appropriate.
4 Unless otherwise stated, Regulations mentioned in this Record refer to Regulations of Annex VI of the Convention and resolutions or circulars refer to those adopted by the International Maritime Organization.

1 Particulars of ship

1.1 Name of ship ……

1.2 Distinctive number or letters ……

1.3 IMO number ……

1.4 Port of registry ……

1.5 Gross tonnage ……

1.6 Date on which keel was laid or ship was at a similar stage of construction ……

1.7 Date of commencement of major engine conversion (if applicable) (Regulation 13): ……

2 Control of emissions from ships

2.1 Ozone depleting substances (Regulation 12)

2.1.1 The following fire extinguishing systems and equipment containing halons may continue in service: ..... □

System equipment	Location on board

2.1.2 The following systems and equipment containing CFCs may continue in service:
..... □

System equipment	Location on board

2.1.3 The following systems containing hydro-chlorofluorocarbons (HCFCs) installed before 1 January 2020 may continue service:
..... □

System equipment	Location on board

2.2 Nitrogen oxides (NOx) (Regulation 13)

2.2.1 The following diesel engines with power output greater than 130 kW, and installed on a ship constructed on or after 1 January 2000, comply with the emission standards of Regulation 13(3)(a) in accordance with the NOx Technical Code:
..... □

Manufacturer and model	Serial number	Use	Power output (kW)	Rated speed (RPM)

Dodatek k Mednarodnemu spričevalu o preprečevanju onesnaževanja zraka (spričevalo IAPP)

ZAPIS O GRADNJI IN OPREMI

v zvezi z določbami Priloge VI k Mednarodni konvenciji o preprečevanju onesnaževanja morja z ladij, 1973, kot je bila spremenjena s Protokolom iz leta 1978, ki se nanaša nanjo (v nadaljevanju »konvencija«)

Opombe:

1 Ta zapis je stalno priložen spričevalu IAPP. Spričevalo IAPP naj bo na ladji kadar koli na voljo.

2 Če izvirni zapis ni v angleškem, francoskem ali španskem jeziku, naj besedilo vključuje prevod v enega od teh jezikov.

3 Vpisi v okenca naj bodo v obliki križca (x), če je odgovor bodisi »da« in »se uporablja«, ali (-), če je odgovor »ne« in »se ne uporablja«.

4 Če ni drugače določeno, se pravila, navedena v tem zapisu, sklicujejo na pravila Priloge VI h konvenciji, resolucije ali okrožnice pa na tista, ki jih je sprejela Mednarodna pomorska organizacija.

1 Podatki o ladji

1.1 Ime ladje: .....

1.2 Razlikovalna številka ali črke: .....

1.3 Številka IMO: .....

1.4 Pristanišče vpisa: .....

1.5 Bruto tonaža: .....

1.6 Datum, ko je bil položen ladijski gredlj ali ko je bila ladja v podobni fazi gradnje: .....

1.7 Datum začetka bistvene predelave motorja (če je ustrezno) (13. pravilo): .....

.....

2 Nadzor nad emisijami z ladij

2.1 Snovi, ki tanjšajo ozonski plašč (12. pravilo)

2.1.1 Naslednji sistemi in oprema za gašenje požara, ki vsebujejo halone, lahko še naprej obratujejo:

..... □

Sistemska oprema	Lokacija na ladji

2.1.2 Naslednji sistemi in oprema, ki vsebujejo CFC, lahko še naprej obratujejo:

..... □

Sistemska oprema	Lokacija na ladji

2.1.3 Naslednji sistemi, ki vsebujejo delno halogenirane klorofluorogljikovodike (HCFC), nameščeni pred 1. januarjem 2020, lahko še naprej obratujejo:

..... □

Sistemska oprema	Lokacija na ladji

2.2 Dušikovi oksidi (NOx) (13. pravilo)

2.2.1 Naslednji dizelski motorji z izhodno močjo nad 130 kW, nameščeni na ladji, ki je bila zgrajena 1. januarja 2000 ali po tem datumu, izpolnjujejo emisijske standarde iz pododstavka (a) tretjega odstavka 13. pravila v skladu s Tehničnim kodeksom NOx:

..... □

Proizvajalec in model	Serijska številka	Uporaba	Izhodna moč (kW)	Nazivna vrtilna frekvenca (vrt./min.)

2.2.2 The following diesel engines with power output greater than 130 kW, and which underwent major conversion per Regulation 13(2) on or after 1 January 2000, comply with the emission standards of Regulation 13(3)(a) in accordance with the NOx Technical Code:

..... □

Manufacturer and model	Serial number	Use	Power output (kW)	Rated speed (RPM)

2.2.3 The following diesel engines with a power output greater than 130 kW and installed on a ship constructed on or after 1 January 2000, or with a power output greater than 130 kW and which underwent major conversion per regulation 13(2) on or after 1 January 2000, are fitted with an exhaust gas cleaning system or other equivalent methods in accordance with Regulation 13(3), and the NOx Technical Code:

..... □

Manufacturer and model	Serial number	Use	Power output (kW)	Rated speed (RPM)

2.2.4 The following diesel engines from 2.2.1, 2.2.2 and 2.2.3 above are fitted with NOx emission monitoring and recording devices in accordance with the NOx Technical Code:

..... □

Manufacturer and model	Serial number	Use	Power output (kW)	Rated speed (RPM)

2.3 Sulphur oxides (SOx) (Regulation 14)

2.3.1 When the ship operates within an SOx Emission Control Area specified in Regulation 14(3), the ship uses:

.1 fuel oil with a sulphur content that does not exceed 1.5% m/m as documented by bunker delivery notes; or

..... □

.2 an approved exhaust gas cleaning system to reduce SOx emissions below 6.0g SOx/kWh; or

..... □

.3 other approved technology to reduce SOx emissions below 6.0g SOx/kWh

..... □

2.4 Volatile organic compounds (VOCs) (Regulation 15)

2.4.1 The tanker has a vapour collection system installed and approved in accordance with MSC/Circ. 585

..... □

2.5 The ship has an incinerator:

.1 which complies with Resolution MEPC.76(40) as amended

..... □

.2 installed before 1 January 2000 which does not comply with Resolution MEPC.76(40) as amended

..... □

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at ……

(*Place of issue of the Record*)

……..... ……..

(*Date of issue*) (*Signature of duly authorized official issuing the certificate*)

(*Seal or stamp of the authority, as appropriate*)

2.2.2 Naslednji dizelski motorji z izhodno močjo nad 130 kW, ki so bili po drugem odstavku 13. pravila bistveno predelani 1. januarja 2000 ali po tem datumu, izpolnjujejo emisijske standarde iz pododstavka (a) tretjega odstavka 13. pravila v skladu s Tehničnim kodeksom NOx:

..... □

Proizvajalec in model	Serijska številka	Uporaba	Izhodna moč (kW)	Nazivna vrtilna frekvenca (vrt./min.)

2.2.3 Naslednji dizelski motorji z izhodno močjo nad 130 kW, nameščeni na ladji, zgrajeni 1. januarja 2000 ali po tem datumu, ali z izhodno močjo nad 130 kW in po drugem odstavku 13. pravila bistveno predelani 1. januarja 2000 ali po tem datumu, so opremljeni s sistemom za čiščenje odpadnih plinov ali drugimi enakovrednimi postopki v skladu s tretjim odstavkom 13. pravila in Tehničnim kodeksom NOx:

..... □

Proizvajalec in model	Serijska številka	Uporaba	Izhodna moč (kW)	Nazivna vrtilna frekvenca (vrt./min.)

2.2.4 Naslednji dizelski motorji iz odstavkov 2.2.1, 2.2.2 in 2.2.3 zgoraj so opremljeni z napravami za spremljanje in evidentiranje emisij NOx v skladu s Tehničnim kodeksom Nox:

..... □

Proizvajalec in model	Serijska številka	Uporaba	Izhodna moč (kW)	Nazivna vrtilna frekvenca (vrt./min.)

2.3 Žveplovi oksidi (SOx) (14. pravilo)

2.3.1 Kadar ladja deluje na območju nadzora nad emisijami SOx, določenem v tretjem odstavku 14. pravila, uporablja:

.1 gorivo z vsebnostjo žvepla, ki ne presega 1,5% m/m, kot je dokumentirano v dobavnicah za gorivo, ali

..... □

.2 odobren sistem čiščenja odpadnih plinov za znižanje emisij SOx pod vrednost 6,0 g SOx/kWh ali

..... □

.3 drugo odobreno tehnologijo za znižanje emisij SOx pod vrednost 6,0 g SOx/kWh

..... □

2.4 Hlapljive organske spojine (HOS) (15. pravilo)

2.4.1 Tanker ima sistem za zbiranje hlapov, nameščen in odobren v skladu z MSC/okrož.585

..... □

2.5 Ladja ima sežigalno peč:

.1 ki je v skladu z resolucijo MEPC.76(40), kot je bila spremenjena

..... □

.2 nameščeno pred 1. januarjem 2000, ki ni v skladu z resolucijo MEPC.76(40), kot je bila spremenjena

..... □

S TEM POTRJUJEMO, da je ta zapis v vseh pogledih pravilen.

Izdano v ……..…

(kraj izdaje zapisa)

…….. ……

(datum izdaje) *(podpis pooblaščene osebe, ki izdaja spričevalo)*

(pečat ali žig organa)

APPENDIX II

TEST CYCLES AND WEIGHTING FACTORS
(Regulation 13)

The following text cycles and weighing factors should be applied for verification of compliance of marine diesel engines with the NO_x limits in accordance with Regulation 13 of this Annex using the test procedure and calculation method as specified in the NO_x technical Code.

.1 For constant speed marine engines for ship main propulsion, including diesel electric drive, test cycle E2 should be applied.
.2 For variable pitch propeller sets test cycle E2 should be applied.
.3 For propeller law operated main and propeller law operated auxiliary engines the test cycle E3 should be applied.
.4 For constant speed auxiliary engines test cycle D2 should be applied.
.5 For variable speed, variable load auxiliary engines, not included above, test cycle C1 should be applied.

Test cycle for "Constant Speed main Propulsion" application
(incl. diesel electric drive or variable pitch propeller installations)

Test cycle type E2	Speed	100%	100%	100%	100%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Test cycle for "Propeller Law operated Main and Propeller Law operated Auxiliary Engine" application

Test cycle type E3	Speed	100%	91%	80%	63%
	Power	100%	75%	50%	25%
	Weighting factor	0.2	0.5	0.15	0.15

Test cycle for "Constant Speed Auxiliary Engine" application

Test cycle type D2	Speed	100%	100%	100%	100%	100%
	Power	100%	75%	50%	25%	10%
	Weighting factor	0.5	0.25	0.3	0.3	0.1

Test cycle for "Variable Speed and Load Auxiliary Engine" application

Test cycle type C1	Speed	Rated				Intermediate			Idle
	Torque%	100%	75%	50%	10%	100%	75%	50%	0%
	Weighting factor	0.15	0.15	0.15	0.1	0.1	0.1	0.1	0.15

DODATEK II

CIKLUSI PREIZKUŠANJA IN PONDERACIJSKI KOEFICIENTI
(13. pravilo)

Za preverjanje skladnosti ladijskih dizelski motorjev z zgornjimi mejami NOx v skladu s 13. pravilom te priloge se uporabljajo naslednji ciklusi preizkušanja, ki temeljijo na preizkusnem postopku in izračunu, kot sta določena v Tehničnem kodeksu NOx.

.1 Za ladijske motorje s stalno hitrostjo, ki se uporabljajo za glavni pogon ladje, vključno z dizelsko-električnim pogonom, se mora uporabljati ciklus preizkušanja E2.
.2 Za propelerska postrojenja z nastavljivimi lopaticami se mora uporabljati ciklus preizkušanja E2.
.3 Za glavne in pomožne pogonske motorje se mora uporabljati ciklus preizkušanja E3.
.4 Za pomožne motorje s stalno hitrostjo se mora uporabljati ciklus preizkušanja D2.
.5 Za pomožne motorje s spremenljivo hitrostjo in spremenljivo obremenitvijo, ki niso zajeti zgoraj, se mora uporabljati ciklus preizkušanja C1.

Ciklus preizkušanja za »glavni pogon s stalno hitrostjo«
(vključno z dizelsko-električnim pogonom ali propelerskimi postrojenji z nastavljivimi lopaticami)

Ciklus preizkušanja E2	Hitrost	100%	100%	100%	100%
	Moč	100%	75%	50%	25%
	Ponderacijski koeficient	0,2	0,5	0,15	0,15

Ciklus preizkušanja za »glavne in pomožne pogonske motorje«

Ciklus preizkušanja E3	Hitrost	100%	91%	80%	63%
	Moč	100%	75%	50%	25%
	Ponderacijski koeficient	0,2	0,5	0,15	0,15

Ciklus preizkušanja za »pomožne motorje s stalno hitrostjo«

Ciklus preizkušanja D2	Hitrost	100%	100%	100%	100%	100%
	Moč	100%	75%	50%	25%	10%
	Ponderacijski koeficient	0,05	0,25	0,3	0,3	0,1

Ciklus preizkušanja za »pomožne motorje s spremenljivo hitrostjo in spremenljivo obremenitvijo«

Ciklus preizkušanja C1	Hitrost	Nazivna				Vmesna			V prostem teku
	Navor%	100%	75%	50%	10%	100%	75%	50%	0%
	Ponderacijski koeficient	0,15	0,15	0,15	0,1	0,1	0,1	0,1	0,15

APPENDIX III

CRITERIA AND PROCEDURES FOR DESIGNATION OF SOx EMISSION CONTROL AREAS (Regulation 14)

1 OBJECTIVES

1.1 The purpose of this Appendix is to provide the criteria and procedures for the designation of SOx Emission Control Areas. The objective of SOx Emission Control Areas is to prevent, reduce and control air pollution from SOx emissions from ships and their attendant adverse impacts on land and sea areas.

1.2 A SOx Emission Control Area should be considered for adoption by the Organization if supported by a demonstrated need to prevent, reduce and control air pollution from SOx emissions from ships.

2 PROPOSAL CRITERIA FOR DESIGNATION OF A SOx EMISSION CONTROL AREA

2.1 A proposal to the Organization for designation of a SOx Emission Control Area may be submitted only by contracting States to the Protocol of 1997. Where two or more contracting States have a common interest in a particular area, they should formulate a coordinated proposal.

2.2 The proposal shall include:

.1 a clear delineation of the proposed area of application of controls on SOx emissions from ships, along with a reference chart on which the area is marked;

.2 a description of the land and sea areas at risk from the impacts of ship SOx emissions;

.3 an assessment that SOx emissions from ships operating in the proposed area of application of the SOx emission controls are contributing to air pollution from SOx, including SOx deposition, and their attendant adverse impacts on the land and sea areas under consideration. Such assessment shall include a description of the impacts of SOx emissions on terrestrial and aquatic ecosystems, areas of natural productivity, critical habitats, water quality, human health, and areas of cultural and scientific significance, if applicable. The sources of relevant data including methodologies used, shall be identified;

.4 relevant information pertaining to the meteorological conditions in the proposed area of application of the SOx emission controls and the land and sea areas at risk, in particular prevailing wind patterns, or to topographical, geological, oceanographic, morphological or other conditions that may lead to an increased probability of higher localized air pollution or levels of acidification;

.5 the nature of the ship traffic in the proposed SOx Emission Control Area, including the patterns and density of such traffic; and

.6 a description of the control measures taken by the proposing contracting State or contracting States addressing land-based sources of SOx emissions affecting the area at risk that are in place and operating concurrent with the consideration of measures to be adopted in relation to provisions of Regulation 14 of Annex VI of the present Convention.

2.3 The geographical limits of an SOx Emission Control Area will be based on the relevant criteria outlined above, including SOx emission and deposition from ships navigating in the proposed area, traffic patterns and density, and wind conditions.

2.4 A proposal to designate a given area as an SOx Emission Control Area should be submitted to the Organization in accordance with the rules and procedures established by the Organization.

3 PROCEDURES FOR THE ASSESSMENT AND ADOPTION OF SOx EMISSION CONTROL AREAS BY THE ORGANIZATION

3.1 The Organization shall consider each proposal submitted to it by a contracting State or contracting States.

3.2 A SOx Emission Control Area shall be designated by means of an amendment to this Annex, considered, adopted and brought into force in accordance with Article 16 of the present Convention.

3.3 In assessing the proposal, the Organization shall take into account the criteria which are to be included in each proposal for adoption as set forth in Section 2 above, and the relative costs of reducing sulphur depositions from ships when compared with land-based controls. The economic impacts on shipping engaged in international trade should also be taken into account.

4 OPERATION OF SOx EMISSION CONTROL AREAS

4.1 Parties which have ships navigating in the area are encouraged to bring to the Organization any concerns regarding the operation of the area.

DODATEK III

MERILA IN POSTOPKI ZA DOLOČITEV OBMOČIJ NADZORA NAD EMISIJAMI SOx (14. pravilo)

1 CILJI

1.1 Namen tega dodatka je zagotoviti merila in postopke za določitev območij nadzora nad emisijami SOx. Cilj območij nadzora nad emisijami SOx je preprečevati, zmanjševati in nadzorovati onesnaževanje zraka zaradi emisij SOx z ladij in zmanjševati negativne učinke takega onesnaževanja na kopnem in morju.

1.2 Organizacija si mora prizadevati sprejeti predlagano območje nadzora nad emisijami SOx, če gre za očitno potrebo po preprečevanju, zmanjševanju in nadzorovanju onesnaževanja zraka zaradi emisij SOx z ladij.

2 PREDLAGANA MERILA ZA DOLOČITEV OBMOČIJ NADZORA NAD EMISIJAMI SOx

2.1 Predloge za določitev območja nadzora nad emisijami SOx lahko Organizaciji predložijo samo države pogodbenice Protokola iz leta 1997. Če imajo dve ali več držav na določenem območju skupni interes, morajo pripraviti usklajen predlog.

2.2 Predlog vključuje:

.1 jasno razmejitev predlaganega območja izvajanja nadzora nad emisijami SOx z ladij skupaj z referenčno skico, na kateri je to območje označeno;

.2 opis kopenskih in morskih območij, ki jih ogrožajo učinki emisij SOx z ladij;

.3 oceno, da emisije SOx z ladij, ki delujejo na predlaganem območju izvajanja nadzora nad emisijami SOx, prispevajo k onesnaževanju zraka z SOx, vključno z usedanjem SOx in njihovimi spremljajočimi negativnimi učinki na zadevna kopenska in morska območja. Taka ocena vključuje opis učinkov emisij SOx na kopenske in vodne ekosisteme, območja naravne produktivnosti, kritične habitate, kakovost vode, zdravje ljudi in morebitna območja kulturnega in znanstvenega pomena. Opisani morajo biti viri ustreznih podatkov, vključno z uporabljenimi metodologijami;

.4 ustrezne informacije o vremenskih razmerah na predlaganem območju izvajanja nadzora nad emisijami SOx ter o ogroženih kopenskih in morskih območjih, predvsem o prevladujočih vzorcih vetra ali topografskih, geoloških, oceanografskih, morfoloških in drugih razmerah, ki lahko pripeljejo do večje verjetnosti povečanega lokaliziranega onesnaževanja zraka ali zakisljevanja;

.5 vrsto ladijskega prometa na predlaganem območju nadzora nad emisijami SOx, vključno z vzorci in gostoto takega prometa, in

.6 opis nadzornih ukrepov države pogodbenice ali držav pogodbenic za reševanje kopenskih virov emisij SOx, ki ogrožajo zadevno območje, ki so že sprejeti in se izvajajo ob upoštevanju ukrepov, sprejetih na podlagi odločb 14. pravila Priloge VI k tej konvenciji.

2.3 Zemljepisne meje območja nadzora nad emisijami SOx bodo temeljile na ustreznih merilih, opisanih zgoraj, vključno z emisijami in izločanjem SOx z ladij, ki plovejo na predlaganem območju, vzorci ter gostoto prometa in vetrovnimi razmerami.

2.4 Predlog za določitev danega območja za območje nadzora nad emisijami SOx mora biti Organizaciji predložen v skladu s pravili in postopki, ki jih določi Organizacija.

3 POSTOPKI, PO KATERIH ORGANIZACIJA PRESOJA IN SPREJME OBMOČJA NADZORA NAD EMISIJAMI SOx

3.1 Organizacija prouči vsak predlog, ki ji ga predložijo država pogodbenica ali države pogodbenice.

3.2 Območje nadzora nad emisijami SOx se določi v obliki spremembe k tej prilogi, ki se prouči, sprejme in uveljavi v skladu s 16. členom te konvencije.

3.3 Pri presojanju predloga Organizacija upošteva merila, ki morajo biti vključena v vsak predlog za sprejetje, kot je opredeljen v 2. razdelku zgoraj, in relativne stroške zmanjševanja izločanja žvepla z ladij v primerjavi z nadzorom na kopnem. Upoštevati se morajo tudi gospodarski učinki na plovbo v mednarodnem prometu.

4 DELOVANJE OBMOČIJ NADZORA NAD EMISIJAMI SOx

4.1 Pogodbenice, katerih ladje plovejo na takem območju, se spodbujajo k temu, da Organizacijo seznanjajo z vsemi zadevami, povezanimi z delovanjem določenega območja.

APPENDIX IV

TYPE APPROVAL AND OPERATING LIMITS FOR SHIPBOARD INCINERATORS
(Regulation 16)

(1) Shipboard incinerators described in Regulation 16(2) shall possess an IMO type approval certificate for each incinerator. In order to obtain such certificate, the incinerator shall be designed and built to an approved standard as described in Regulation 16(2). Each model shall be subject to a specified type approval test operation at the factory or an approved test facility, and under the responsibility of the Administration, using the following standard fuel/waste specification for the type approval test for determining whether the incinerator operates within the limits specified in paragraph (2) of this Appendix:

Sludge oil consisting of:	75% SLUDGE OIL FROM HFO; 5% WASTE LUBRIFICATING OIL; and 20% EMULSIFIED WATER.
Solid waste consisting of:	50% Food Waste 50% Rubbish Containing Approx. 30% Paper, " 40% Cardboard, " 10% Rags, " 20% Plastic The mixture will have up to 50% moisture and 7% incombustible solids.

(2) Incinerators described in Regulation 16(2) shall operate within the following limits:

O_2 in combustion chamber	6 – 12%
CO in flue gas maximum average:	200 mg/MJ
Soot Number maximum average:	BACHARACH 3 or RINGELMAN 1 (20% opacity) (A higher soot number is acceptable only during very short periods such as starting up)
Unburned components in Ash residues:	Maximum 10% by weight
Combustion chamber flue gas outlet temperature range:	850 – 1200 degrees Celsius

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APPENDIX V

INFORMATION TO BE INCLUDED IN THE BUNKER DELIVERY NOTE
(Regulation 18(3))

Name and IMO Number of receiving ship

Port

Date of commencement of delivery

Name, address and telephone number of marine fuel oil supplier

Product name(s)

Quantity in metric tons

Density at 15 °C, kg/m^3

Sulphur content (%m/m)

A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with Regulation 14(1) or (4)(a) and Regulation 18(1) of this Annex.

DODATEK IV

TIPSKO SOGLASJE IN ZGORNJE MEJE DELOVANJA LADIJSKIH SEŽIGALNIH PEČI
(16. pravilo)

(1) Ladijske sežigalne peči, opisane v drugem odstavku 16. pravila, morajo pridobiti spričevalo o tipskem soglasju IMO k vsaki posamezni peči. Da bi sežigalna peč lahko pridobila tako spričevalo, mora biti zasnovana in konstruirana po odobrenem standardu, opisanem v drugem odstavku 16. pravila. Vsak model se mora za pridobitev tipskega soglasja preizkusiti v tovarni ali odobrenem obratu za preizkušanje pod odgovornostjo uprave, pri čemer se za preizkušanje uporablja naslednja standardna specifikacija odpadnih usedlin energentov, da se ugotovi, ali sežigalna peč deluje v mejah, opredeljenih v drugem odstavku tega dodatka:

oljna gošča, v kateri je:	75% GOŠČE HFO; 5% ODPADNEGA MAZALNEGA OLJA IN 20% EMULGIRNE VODE
odpadki v trdnem stanju, sestavljeni iz:	50% živilskih odpadkov 50% smeti, med katerimi je okoli 30% papirja, ” 40% kartona ” 10% krp, ” 20% plastike Mešanica ima do 50% vlage in 7% negorljivih trdnih snovi.

(2) Sežigalne peči, opisane v drugem odstavku 16. pravila, delujejo v naslednjih zgornjih mejah:

O_2 v zgorevalni komori:	6−12%
najvišje povprečje CO v zgorevalnih dimnih plinih:	200 mg/MJ
najvišje povprečje osajenja:	BACHARACH 3 ali RINGELMAN 1 (20-odstotna motnost) (višje osajenje je sprejemljivo samo med zelo kratkimi obdobji, kot je zagon)
nezgorele sestavine v pepelu:	največ 10% po teži
razpon izhodne temperature dimnih plinov iz zgorevalne komore:	850–1200 °C

DODATEK V

PODATKI, KI MORAJO BITI NA DOBAVNICI ZA GORIVO
(tretji odstavek 18. pravila)

Ime in številka IMO prevzemne ladje

Pristanišče

Datum začetka dobave

Ime, naslov in telefonska številka dobavitelja goriva

Naziv ali nazivi izdelka

Količina metrske tone

Gostota pri 15 °C (kg/m^3)

Vsebnost žvepla (% m/m)

Izjavo podpiše predstavnik dobavitelja goriva, ki potrdi, da je dobavljeno gorivo v skladu s prvim odstavkom ali pododstavkom (a) četrtega odstavka 14. pravila in prvim odstavkom 18. pravila te priloge.

3. člen

Za izvajanje sporazuma skrbi Ministrstvo za promet.

4. člen

Ta zakon začne veljati petnajsti dan po objavi v Uradnem listu Republike Slovenije – Mednarodne pogodbe.

Št. 802-06/05-13/1
Ljubljana, dne 21. junija 2005
EPA 278-IV

Predsednik
Državnega zbora
Republike Slovenije
France Cukjati, dr. med. l. r.

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33. Zakon o ratifikaciji Protokola o obstojnih organskih onesnaževalih h Konvenciji iz leta 1979 o onesnaževanju zraka na velike razdalje preko meja (MPOKOZ)

Na podlagi druge alinee prvega odstavka 107. člena in prvega odstavka 91. člena Ustave Republike Slovenije izdajam

U K A Z
O RAZGLASITVI ZAKONA O RATIFIKACIJI PROTOKOLA O OBSTOJNIH ORGANSKIH ONESNAŽEVALIH H KONVENCIJI IZ LETA 1979 O ONESNAŽEVANJU ZRAKA NA VELIKE RAZDALJE PREKO MEJA (MPOKOZ)

Razglašam Zakon o ratifikaciji Protokola o obstojnih organskih onesnaževalih h Konvenciji iz leta 1979 o onesnaževanju zraka na velike razdalje preko meja (MPOKOZ), ki ga je sprejel Državni zbor Republike Slovenije na seji 21. junija 2005.

Št. 001-22-47/05
Ljubljana, 29. junija 2005

dr. Janez Drnovšek l. r.
Predsednik
Republike Slovenije

Z A K O N
O RATIFIKACIJI PROTOKOLA O OBSTOJNIH ORGANSKIH ONESNAŽEVALIH H KONVENCIJI IZ LETA 1979 O ONESNAŽEVANJU ZRAKA NA VELIKE RAZDALJE PREKO MEJA (MPOKOZ)

1. člen

Ratificira se Protokol o obstojnih organskih onesnaževalih h Konvenciji iz leta 1979 o onesnaževanju zraka na velike razdalje preko meja, sestavljen v Aarhusu (Danska) 24. junija 1998.

2. člen

Besedilo protokola se v izvirniku v angleškem jeziku ter v prevodu v slovenskem jeziku glasi:

P R O T O C O L
TO THE 1979 CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION ON PERSISTENT ORGANIC POLLUTANTS

The Parties,

Determined to implement the Convention on Long-range Transboundary Air Pollution,

Recognizing that emissions of many persistent organic pollutants are transported across international boundaries and are deposited in Europe, North America and the Arctic, far from their site of origin, and that the atmosphere is the dominant medium of transport,

Aware that persistent organic pollutants resist degradation under natural conditions and have been associated with adverse effects on human health and the environment,

Concerned that persistent organic pollutants can biomagnify in upper trophic levels to concentrations which might affect the health of exposed wildlife and humans,

Acknowledging that the Arctic ecosystems and especially its indigenous people, who subsist on Arctic fish and mammals, are particularly at risk because of the biomagnification of persistent organic pollutants,

Mindful that measures to control emissions of persistent organic pollutants would also contribute to the protection of the environment and human health in areas outside the United Nations Economic Commission for Europe's region, including the Arctic and international waters,

Resolved to take measures to anticipate, prevent or minimize emissions of persistent organic pollutants, taking into account the application of the precautionary approach, as set forth in principle 15 of the Rio Declaration on Environment and Development,

Reaffirming that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and development policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction,

Noting the need for global action on persistent organic pollutants and recalling the role envisaged in chapter 9 of Agenda 21 for regional agreements to reduce global transboundary air pollution and, in particular, for the United Nations Economic Commission for Europe to share its regional experience with other regions of the world,

Recognizing that there are subregional, regional and global regimes in place, including international instruments governing the management of hazardous wastes, their transboundary movement and disposal, in particular the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal,

Considering that the predominant sources of air pollution contributing to the accumulation of persistent organic pollutants are the use of certain pesticides, the manufacture and use of certain chemicals, and the unintentional formation of certain substances in waste incineration, combustion, metal production and mobile sources,

Aware that techniques and management practices are available to reduce emissions of persistent organic pollutants into the air,

Conscious of the need for a cost-effective regional approach to combating air pollution,

Noting the important contribution of the private and non-governmental sectors to knowledge of the effects associated with persistent organic pollutants, available alternatives and abatement techniques, and their role in assisting in the reduction of emissions of persistent organic pollutants,

Bearing in mind that measures taken to reduce persistent organic pollutant emissions should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international competition and trade,

Taking into consideration existing scientific and technical data on emissions, atmospheric processes and effects on human health and the environment of persistent organic pollutants, as well as on abatement costs, and acknowledging the need to continue scientific and technical cooperation to further the understanding of these issues,

Recognizing the measures on persistent organic pollutants already taken by some of the Parties on a national level and/or under other international conventions,

Have agreed as follows:

Article 1

DEFINITIONS

For the purposes of the present Protocol,

1. "Convention" means the Convention on Long-range Transboundary Air Pollution, adopted in Geneva on 13 November 1979;

2. "EMEP" means the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe;

3. "Executive Body" means the Executive Body for the Convention constituted under article 10, paragraph 1, of the Convention;

4. "Commission" means the United Nations Economic Commission for Europe;

5. "Parties" means, unless the context otherwise requires, the Parties to the present Protocol;

6. "Geographical scope of EMEP" means the area defined in article 1, paragraph 4, of the Protocol to the 1979 Convention on Long-range Transboundary Air Pollution on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP), adopted in Geneva on 28 September 1984;

7. "Persistent organic pollutants" (POPs) are organic substances that: (i) possess toxic characteristics; (ii) are persistent; (iii) bioaccumulate; (iv) are prone to long-range transboundary atmospheric transport and deposition; and (v) are likely to cause significant adverse human health or environmental effects near to and distant from their sources;

8. "Substance" means a single chemical species, or a number of chemical species which form a specific group by virtue of (a) having similar properties and being emitted together into the environment; or (b) forming a mixture normally marketed as a single article;

9. "Emission" means the release of a substance from a point or diffuse source into the atmosphere;

10. "Stationary source" means any fixed building, structure, facility, installation, or equipment that emits or may emit any persistent organic pollutant directly or indirectly into the atmosphere;

11. "Major stationary source category" means any stationary source category listed in annex VIII;

12. "New stationary source" means any stationary source of which the construction or substantial modification is commenced after the expiry of two years from the date of entry into force of: (i) this Protocol; or (ii) an amendment to annex III or VIII, where the stationary source becomes subject to the provisions of this Protocol only by virtue of that amendment. It shall be a matter for the competent national authorities to decide whether a modification is substantial or not, taking into account such factors as the environmental benefits of the modification.

Article 2

OBJECTIVE

The objective of the present Protocol is to control, reduce or eliminate discharges, emissions and losses of persistent organic pollutants.

Article 3

BASIC OBLIGATIONS

1. Except where specifically exempted in accordance with article 4, each Party shall take effective measures:

(a) To eliminate the production and use of the substances listed in annex I in accordance with the implementation requirements specified therein;

(b) (i) To ensure that, when the substances listed in annex I are destroyed or disposed of, such destruction or disposal is undertaken in an environmentally sound manner, taking into account relevant subregional, regional and global regimes governing the management of hazardous wastes and their disposal, in particular the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal;

(ii) To endeavour to ensure that the disposal of substances listed in annex I is carried out domestically, taking into account pertinent environmental considerations;

(iii) To ensure that the transboundary movement of the substances listed in annex I is conducted in an environmentally sound manner, taking into consideration applicable subregional, regional, and global regimes governing the transboundary movement of hazardous wastes, in particular the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal;

(c) To restrict the substances listed in annex II to the uses described, in accordance with the implementation requirements specified therein.

2. The requirements specified in paragraph 1 (b) above shall become effective for each substance upon the date that production or use of that substance is eliminated, whichever is later.

3. For substances listed in annex I, II, or III, each Party should develop appropriate strategies for identifying articles still in use and wastes containing such substances, and shall take appropriate measures to ensure that such wastes and such articles, upon becoming wastes, are destroyed or disposed of in an environmentally sound manner.

4. For the purposes of paragraphs 1 to 3 above, the terms waste, disposal, and environmentally sound shall be interpreted in a manner consistent with the use of those terms under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

5. Each Party shall:

(a) Reduce its total annual emissions of each of the substances listed in annex III from the level of the emission in a reference year set in accordance with that annex by taking effective measures, appropriate in its particular circumstances;

(b) No later than the timescales specified in annex VI, apply:

(i) The best available techniques, taking into consideration annex V, to each new stationary source within a major stationary source category for which annex V identifies best available techniques;

(ii) Limit values at least as stringent as those specified in annex IV to each new stationary source within a category mentioned in that annex, taking into consideration annex V. A Party may, as an alternative, apply different emission reduction strategies that achieve equivalent overall emission levels;

(iii) The best available techniques, taking into consideration annex V, to each existing stationary source within a major stationary source category for which annex V identifies best available techniques, insofar as this is technically and economically feasible. A Party may, as an alternative, apply different emission reduction strategies that achieve equivalent overall emission reductions;

(iv) Limit values at least as stringent as those specified in annex IV to each existing stationary source within a category mentioned in that annex, insofar as this is technically and economically feasible, taking into consideration annex V. A Party may, as an alternative, apply different emission reduction strategies that achieve equivalent overall emission reductions;

(v) Effective measures to control emissions from mobile sources, taking into consideration annex VII.

6. In the case of residential combustion sources, the obligations set out in paragraph 5 (b) (i) and (iii) above shall refer to all stationary sources in that category taken together.

7. Where a Party, after the application of paragraph 5 (b) above, cannot achieve the requirements of paragraph 5 (a) above for a substance specified in annex III, it shall be exempted from its obligations in paragraph 5 (a) above for that substance.

8. Each Party shall develop and maintain emission inventories for the substances listed in annex III, and shall collect available information relating to the production and sales of the substances listed in annexes I and II, for those Parties within the geographical scope of EMEP, using, as a minimum, the methodologies and the spatial and temporal resolution specified by the Steering Body of EMEP, and, for those Parties outside the geographical scope of EMEP, using as guidance the methodologies developed through the work plan of the Executive Body. It shall report this information in accordance with the reporting requirements set out in article 9 below.

Article 4

EXEMPTIONS

1. Article 3, paragraph 1, shall not apply to quantities of a substance to be used for laboratory-scale research or as a reference standard.

2. A Party may grant an exemption from article 3, paragraphs 1 (a) and (c), in respect of a particular substance, provided that the exemption is not granted or used in a manner that would undermine the objectives of the present Protocol, and only for the following purposes and under the following conditions:

(a) For research other than that referred to in paragraph 1 above, if:

(i) No significant quantity of the substance is expected to reach the environment during the proposed use and subsequent disposal;

(ii) The objectives and parameters of such research are subject to assessment and authorization by the Party; and

(iii) In the event of a significant release of a substance into the environment, the exemption will terminate immediately, measures will be taken to mitigate the release as appropriate, and an assessment of the containment measures will be conducted before research may resume;

(b) To manage as necessary a public health emergency, if:

(i) No suitable alternative measures are available to the Party to address the situation;

(ii) The measures taken are proportional to the magnitude and severity of the emergency;

(iii) Appropriate precautions are taken to protect human health and the environment and to ensure that the substance is not used outside the geographical area subject to the emergency;

(iv) The exemption is granted for a period of time that does not exceed the duration of the emergency; and

(v) Upon termination of the emergency, any remaining stocks of the substance are subject to the provisions of article 3, paragraph 1 (b);

(c) For a minor application judged to be essential by the Party, if:

(i) The exemption is granted for a maximum of five years;

(ii) The exemption has not previously been granted by it under this article;

(iii) No suitable alternatives exist for the proposed use;

(iv) The Party has estimated the emissions of the substance resulting from the exemption and their contribution to the total emissions of the substance from the Parties;

(v) Adequate precautions are taken to ensure that the emissions to the environment are minimized; and

(vi) Upon termination of the exemption, any remaining stocks of the substance are subject to the provisions of article 3, paragraph 1 (b).

3. Each Party shall, no later than ninety days after granting an exemption under paragraph 2 above, provide the secretariat with, as a minimum, the following information:

(a) The chemical name of the substance subject to the exemption;

(b) The purpose for which the exemption has been granted;

(c) The conditions under which the exemption has been granted;

(d) The length of time for which the exemption has been granted;

(e) Those to whom, or the organization to which, the exemption applies; and

(f) For an exemption granted under paragraphs 2 (a) and (c) above, the estimated emissions of the substance as a result of the exemption and an assessment of their contribution to the total emissions of the substance from the Parties.

4. The secretariat shall make available to all Parties the information received under paragraph 3 above.

Article 5

EXCHANGE OF INFORMATION AND TECHNOLOGY

The Parties shall, in a manner consistent with their laws, regulations and practices, create favourable conditions to facilitate the exchange of information and technology designed to reduce the generation and emission of persistent organic pollutants and to develop cost-effective alternatives, by promoting, *inter alia*:

(a) Contacts and cooperation among appropriate organizations and individuals in the private and public sectors that are capable of providing technology, design and engineering services, equipment or finance;

(b) The exchange of and access to information on the development and use of alternatives to persistent organic pollutants as well as on the evaluation of the risks that such alternatives pose to human health and the environment, and information on the economic and social costs of such alternatives;

(c) The compilation and regular updating of lists of their designated authorities engaged in similar activities in other international forums;

(d) The exchange of information on activities conducted in other international forums.

Article 6

PUBLIC AWARENESS

The Parties shall, consistent with their laws, regulations and practices, promote the provision of information to the general public, including individuals who are direct users of persistent organic pollutants. This information may include, *inter alia*:

(a) Information, including labelling, on risk assessment and hazard;

(b) Information on risk reduction;

(c) Information to encourage the elimination of persistent organic pollutants or a reduction in their use, including, where appropriate, information on integrated pest management, integrated crop management and the economic and social impacts of this elimination or reduction; and

(d) Information on alternatives to persistent organic pollutants, as well as an evaluation of the risks that such alternatives pose to human health and the environment, and information on the economic and social impacts of such alternatives.

Article 7

STRATEGIES, POLICIES, PROGRAMMES, MEASURES AND INFORMATION

1. Each Party shall, no later than six months after the date on which this Protocol enters into force for it, develop strategies, policies and programmes in order to discharge its obligations under the present Protocol.

2. Each Party shall:

(a) Encourage the use of economically feasible, environmentally sound management techniques, including best environmental practices, with respect to all aspects of the use, production, release, processing, distribution, handling, transport and reprocessing of substances subject to the present Protocol and manufactured articles, mixtures or solutions containing such substances;

(b) Encourage the implementation of other management programmes to reduce emissions of persistent organic pollutants, including voluntary programmes and the use of economic instruments;

(c) Consider the adoption of additional policies and measures as appropriate in its particular circumstances, which may include non-regulatory approaches;

(d) Make determined efforts that are economically feasible to reduce levels of substances subject to the present Protocol that are contained as contaminants in other substances, chemical products or manufactured articles, as soon as the relevance of the source has been established;

(e) Take into consideration in its programmes for evaluating substances, the characteristics specified in paragraph 1 of Executive Body decision 1998/2 on information to be submitted and procedures for adding substances to annex I, II or III, including any amendments thereto.

3. The Parties may take more stringent measures than those required by the present Protocol.

Article 8

RESEARCH, DEVELOPMENT AND MONITORING

The Parties shall encourage research, development, monitoring and cooperation related, but not limited, to:

(a) Emissions, long-range transport and deposition levels and their modelling, existing levels in the biotic and abiotic environment, the elaboration of procedures for harmonizing relevant methodologies;

(b) Pollutant pathways and inventories in representative ecosystems;

(c) Relevant effects on human health and the environment, including quantification of those effects;

(d) Best available techniques and practices, including agricultural practices, and emission control techniques and practices currently employed by the Parties or under development;

(e) Methodologies permitting consideration of socio-economic factors in the evaluation of alternative control strategies;

(f) An effects-based approach which integrates appropriate information, including information obtained under

subparagraphs (a) to (e) above, on measured or modelled environmental levels, pathways, and effects on human health and the environment, for the purpose of formulating future control strategies which also take into account economic and technological factors;

(g) Methods for estimating national emissions and projecting future emissions of individual persistent organic pollutants and for evaluating how such estimates and projections can be used to structure future obligations;

(h) Levels of substances subject to the present Protocol that are contained as contaminants in other substances, chemical products or manufactured articles and the significance of these levels for long-range transport, as well as techniques to reduce levels of these contaminants, and, in addition, levels of persistent organic pollutants generated during the life cycle of timber treated with pentachlorophenol.

Priority should be given to research on substances considered to be the most likely to be submitted under the procedures specified in article 14, paragraph 6.

Article 9

REPORTING

1. Subject to its laws governing the confidentiality of commercial information:

(a) Each Party shall report, through the Executive Secretary of the Commission, to the Executive Body, on a periodic basis as determined by the Parties meeting within the Executive Body, information on the measures that it has taken to implement the present Protocol;

(b) Each Party within the geographical scope of EMEP shall report, through the Executive Secretary of the Commission, to EMEP, on a periodic basis to be determined by the Steering Body of EMEP and approved by the Parties at a session of the Executive Body, information on the levels of emissions of persistent organic pollutants using, as a minimum, the methodologies and the temporal and spatial resolution specified by the Steering Body of EMEP. Parties in areas outside the geographical scope of EMEP shall make available similar information to the Executive Body if requested to do so. Each Party shall also provide information on the levels of emissions of the substances listed in annex III for the reference year specified in that annex.

2. The information to be reported in accordance with paragraph 1 (a) above shall be in conformity with a decision regarding format and content to be adopted by the Parties at a session of the Executive Body. The terms of this decision shall be reviewed as necessary to identify any additional elements regarding the format or the content of the information that is to be included in the reports.

3. In good time before each annual session of the Executive Body, EMEP shall provide information on the long-range transport and deposition of persistent organic pollutants.

Article 10

REVIEWS BY THE PARTIES AT SESSIONS OF THE EXECUTIVE BODY

1. The Parties shall, at sessions of the Executive Body, pursuant to article 10, paragraph 2 (a), of the Convention, review the information supplied by the Parties, EMEP and other subsidiary bodies, and the reports of the Implementation Committee referred to in article 11 of the present Protocol.

2. The Parties shall, at sessions of the Executive Body, keep under review the progress made towards achieving the obligations set out in the present Protocol.

3. The Parties shall, at sessions of the Executive Body, review the sufficiency and effectiveness of the obligations set out in the present Protocol. Such reviews will take into account the best available scientific information on the effects of the deposition of persistent organic pollutants, assessments of technological developments, changing economic conditions and the fulfilment of the obligations on emission levels. The procedures, methods and timing for such reviews shall be specified by the Parties at a session of the Executive Body. The first such review shall be completed no later than three years after the present Protocol enters into force.

Article 11

COMPLIANCE

Compliance by each Party with its obligations under the present Protocol shall be reviewed regularly. The Implementation Committee established by decision 1997/2 of the Executive Body at its fifteenth session shall carry out such reviews and report to the Parties meeting within the Executive Body in accordance with the terms of the annex to that decision, including any amendments thereto.

Article 12

SETTLEMENT OF DISPUTES

1. In the event of a dispute between any two or more Parties concerning the interpretation or application of the present Protocol, the Parties concerned shall seek a settlement of the dispute through negotiation or any other peaceful means of their own choice. The parties to the dispute shall inform the Executive Body of their dispute.

2. When ratifying, accepting, approving or acceding to the present Protocol, or at anytime thereafter, a Party which is not a regional economic integration organization may declare in a written instrument submitted to the Depositary that, in respect of any dispute concerning the interpretation or application of the Protocol, it recognizes one or both of the following means of dispute settlement as compulsory ipso facto and without special agreement, in relation to any Party accepting the same obligation:

(a) Submission of the dispute to the International Court of Justice;

(b) Arbitration in accordance with procedures to be adopted by the Parties at a session of the Executive Body, as soon as practicable, in an annex on arbitration.

A Party which is a regional economic integration organization may make a declaration with like effect in relation to arbitration in accordance with the procedures referred to in subparagraph (b) above.

3. A declaration made under paragraph 2 above shall remain in force until it expires in accordance with its terms or until three months after written notice of its revocation has been deposited with the Depositary.

4. A new declaration, a notice of revocation or the expiry of a declaration shall not in any way affect proceedings pending before the International Court of Justice or the arbitral tribunal, unless the parties to the dispute agree otherwise.

5. Except in a case where the parties to a dispute have accepted the same means of dispute settlement under paragraph 2, if after twelve months following notification by one Party to another that a dispute exists between them, the Parties concerned have not been able to settle their dispute through the means mentioned in paragraph 1 above, the dispute shall be submitted, at the request of any of the parties to the dispute, to conciliation.

6. For the purpose of paragraph 5, a conciliation commission shall be created. The commission shall be composed of equal numbers of members appointed by each Party concerned or, where the Parties in conciliation share the same interest, by the group sharing that interest, and a chairperson chosen jointly by the members so appointed. The commission shall render a recommendatory award, which the Parties shall consider in good faith.

Article 13

ANNEXES

The annexes to the present Protocol shall form an integral part of the Protocol. Annexes V and VII are recommendatory in character.

Article 14

AMENDMENTS

1. Any Party may propose amendments to the present Protocol.

2. Proposed amendments shall be submitted in writing to the Executive Secretary of the Commission, who shall communicate them to all Parties. The Parties meeting within the Executive Body shall discuss the proposed amendments at its next session, provided that the proposals have been circulated by the Executive Secretary to the Parties at least ninety days in advance.

3. Amendments to the present Protocol and to annexes I to IV, VI and VIII shall be adopted by consensus of the Parties present at a session of the Executive Body, and shall enter into force for the Parties which have accepted them on the ninetieth day after the date on which two thirds of the Parties have deposited with the Depositary their instruments of acceptance thereof. Amendments shall enter into force for any other Party on the ninetieth day after the date on which that Party has deposited its instrument of acceptance thereof.

4. Amendments to annexes V and VII shall be adopted by consensus of the Parties present at a session of the Executive Body. On the expiry of ninety days from the date of its communication to all Parties by the Executive Secretary of the Commission, an amendment to any such annex shall become effective for those Parties which have not submitted to the Depositary a notification in accordance with the provisions of paragraph 5 below, provided that at least sixteen Parties have not submitted such a notification.

5. Any Party that is unable to approve an amendment to annex V or VII shall so notify the Depositary in writing within ninety days from the date of the communication of its adoption. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time substitute an acceptance for its previous notification and, upon deposit of an instrument of acceptance with the Depositary, the amendment to such an annex shall become effective for that Party.

6. In the case of a proposal to amend annex I, II, or III by adding a substance to the present Protocol:

(a) The proposer shall provide the Executive Body with the information specified in Executive Body decision 1998/2, including any amendments thereto; and

(b) The Parties shall evaluate the proposal in accordance with the procedures set forth in Executive Body decision 1998/2, including any amendments thereto.

7. Any decision to amend Executive Body decision 1998/2 shall be taken by consensus of the Parties meeting within the Executive Body and shall take effect sixty days after the date of adoption.

Article 15

SIGNATURE

1. The present Protocol shall be open for signature at Aarhus (Denmark) from 24 to 25 June 1998, then at United Nations Headquarters in New York until 21 December 1998, by States members of the Commission as well as States having consultative status with the Commission pursuant to paragraph 8 of Economic and Social Council resolution 36 (IV) of 28 March 1947, and by regional economic integration organizations, constituted by sovereign States members of the Commission, which have competence in respect of the negotiation, conclusion and application of international agreements in matters covered by the Protocol, provided that the States and organizations concerned are Parties to the Convention.

2. In matters within their competence, such regional economic integration organizations shall, on their own behalf, exercise the rights and fulfil the responsibilities which the present Protocol attributes to their member States. In such cases, the member States of these organizations shall not be entitled to exercise such rights individually.

Article 16

RATIFICATION, ACCEPTANCE, APPROVAL AND ACCESSION

1. The present Protocol shall be subject to ratification, acceptance or approval by Signatories.

2. The present Protocol shall be open for accession as from 21 December 1998 by the States and organizations that meet the requirements of article 15, paragraph 1.

Article 17

DEPOSITARY

The instruments of ratification, acceptance, approval or accession shall be deposited with the Secretary-General of the United Nations, who will perform the functions of Depositary.

Article 18

ENTRY INTO FORCE

1. The present Protocol shall enter into force on the ninetieth day following the date on which the sixteenth instrument of ratification, acceptance, approval or accession has been deposited with the Depositary.

2. For each State and organization referred to in article 15, paragraph 1, which ratifies, accepts or approves the present Protocol or accedes thereto after the deposit of the sixteenth instrument of ratification, acceptance, approval or accession, the Protocol shall enter into force on the ninetieth day following the date of deposit by such Party of its instrument of ratification, acceptance, approval or accession.

Article 19

WITHDRAWAL

At any time after five years from the date on which the present Protocol has come into force with respect to a Party, that Party may withdraw from it by giving written notification to the Depositary. Any such withdrawal shall take effect on the ninetieth day following the date of its receipt by the Depositary, or on such later date as may be specified in the notification of the withdrawal.

Article 20

AUTHENTIC TEXTS

The original of the present Protocol, of which the English, French and Russian texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto, have signed the present Protocol.

Done at Aarhus (Denmark), this twenty-fourth day of June, one thousand nine hundred and ninety-eight.

ANNEX I

SUBSTANCES SCHEDULED FOR ELIMINATION

Unless otherwise specified in the present Protocol, this annex shall not apply to the substances listed below when they occur: (i) as contaminants in products; or (ii) in articles manufactured or in use by the implementation date; or (iii) as site-limited chemical intermediates in the manufacture of one or more different substances and are thus chemically transformed. Unless otherwise specified, each obligation below is effective upon the date of entry into force of the Protocol.

Substance	Implementation requirements	
	Elimination of	Conditions
Aldrin CAS: 309-00-2	Production	None
	Use	None
Chlordane CAS: 57-74-9	Production	None
	Use	None
Chlordecone CAS: 143-50-0	Production	None
	Use	None
DDT CAS: 50-29-3	Production	1. Elimination production within one year of consensus by the Parties that suitable alternatives to DDT are available for public healt protection from diseases such as malaria and encephalitis. 2. With a view to eliminationg the production of DDT at the earliest opportunity, the Parties shall, no later than one year after the data of entry into force of the present Protocol and periodically thereafter as necessary, and in consultation with the World Health Organization, the Food and Agriculture Orgnization of the United Nations and the United Nations Environment Programme, review the availability and feasibility of alternatives and, as appropriate, promote the commercialization of safer and economically viable aternatives to DDT.
	Use	None, except as identified in annex II.
Dieldrin CAS: 60-51-1	Production	None
	Use	None
Endrin CAS: 72-20-8	Production	None
	Use	None
Heptachlor CAS: 76-44-8	Production	None
	Use	None, except for use by certified personnel for the control of fire ants in closed industrial electrical junction boxes. Such use shall be re-evaluated under this Protocol no later than two years after the date of entry into force.
Hexabromobiphenyl CAS: 36355-01-8	Production	None
	Use	None
Hexachlorobenzene CAS: 118-74-1	Production	None, except for production for a limited purpose as specified in a statement deposited by a country with an economy in transition upon signature or accession.
	Use	None, except for a limited use as specified in a statement deposited by a country with an economy in transition upon signature or accession.
Mirex CAS: 2385-85-5	Production	None
	Use	None
PCB [a/]	Production	None, except for countries with economies in transition which shall eliminate production as soon as possible and no later than 31 December 2005 and which state in a declaration to be deposited together with their instrument of ratification, acceptance, approval or accession, their intention to do so.
	Use	None, except as identified in annex II.
Toxaphene CAS: 8001-35-2	Production	None
	Use	None

[a/] The Parties agree to reassess under the Protocol by 31 December 2004 the production and use of polychlorinated terphenyls and "ugilec".

ANNEX II

SUBSTANCES SCHEDULED FOR RESTRICTIONS ON USE

Unless otherwise specified in the present Protocol, this annex shall not apply to the substances listed below when they occur: (i) as contaminants in products; or (ii) in articles manufactured or in use by the implementation date; or (iii) as site-limited chemical intermediates in the manufacture of one or more different substances and are thus chemically transformed. Unless otherwise specified, each obligation below is effective upon the date of entry into force of the Protocol.

Substance	Implementation requirements	
	Restricted to uses	Conditions
DDT CAS: 50-29-3	1. For public health protection from diseases such as malaria encephalitis. 2. As a chemical intermediate to produce Dicofol.	1. Use allowed only as a component of an integrated pest management strategy and only to the extent necessary and only until one year after the date of the elimination of production in accordance with annex I. 2. Such use shall be reassessed no later than two years after the date of entry into force of the present Protocol.
HCH CAS: 608-73-1	Technical HCH (i.e. HCH mixed isomers) is restricted to use as an intermediate in chemical manufacturing.	
	Products in which at least 99% of the HCH isomer is in the gamma form (i.e. lindane, CAS: 58-89-9) are restricted to the following uses: 1. Seed treatment. 2. Soil applications directly followed by incorporation into the topsoil surface layer 3. Professional remedial and industrial treatment of lumber, timer and logs 4. Public health and veterinary topical insecticide. 5. Non-aerial application to tree seedlings, small-scale lawn use, and indoor and outdoor use for nursery stock and ornamentals. 6. Indoor industrial and residential applications	All restricted uses of lindane shall be reassessed under the Protocol no later than two years after the date of entry into force.
PCB [a/]	PCBs in use as of the date of entry into force or produced up to 31 December 2005 in accordance with the provisions of annex I.	Parties shall make determined efforts designed to lead to: (a) The elimination of the use of identifiable PCBs in equipment (i.e. transformers, capacitors or other receptacles containing residual liquid stocks) containing PCBs in volumes greater than 5 dm^3 and having a concentration of 0.05% PCBs or greater, as soon as possible, but no later than 31 December 2010, or 31 December 2015 for countries with economies in transition; (b) The destruction or decontamination in an environmentally sound manner of all liquid PCBs referred to in subparagraph (a) and other liquid PCBs containing more than 0.005% PCBs not in equipment, as soon as possible, but no later than 31 December 2015, or 31 December 2020 for countries with economies in transition; and (c) The decontamination or disposal of equipment referred in subparagraph (a) in an environmentally sound manner.

[a/] The Parties agree to reassess under the Protocol by 31 December 2004 the production and use of polychlorinated terphenyls and "ugilec".

ANNEX III

SUBSTANCES REFERRED TO IN ARTICLE 3, PARAGRAPH 5 (a), AND THE REFERENCE YEAR FOR THE OBLIGATION

Substance	Reference year
PAHs [a/]	1990; or an alternative year from 1985 to 1995 inclusive, specified by a Party upon ratification, acceptance, approval or accession
Dioxins/furans [b/]	1990; or an alternative year from 1985 to 1995 inclusive, specified by a Party upon ratification, acceptance, approval or accession.
Hexachlorobenzene	1990; or an alternative year from 1985 to 1995 inclusive, specified by a Party upon ratification, acceptance, approval or accession.

[a/] Polycyclic aromatic hydrocarbons (PAHs): For the purposes of emission inventories, the following four indicator compounds shall be used: benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene.

[b/] Dioxins and furans (PCDD/F): Polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) are tricyclic, aromatic compounds formed by two benzene rings which are connected by two oxygen atoms in PCDD and by one oxygen atom in PCDF and the hydrogen atoms of which may be replaced by up to eight chlorine atoms.

ANNEX IV

LIMIT VALUES FOR PCDD/F FROM MAJOR STATIONARY SOURCES

I. INTRODUCTION

1. A definition of dioxins and furans (PCDD/F) is provided in annex III to the present Protocol.

2. Limit values are expressed as ng/m^3 or mg/m^3 under standard conditions (273.15 K, 101.3 kPa, and dry gas).

3. Limit values relate to the normal operating situation, including start-up and shutdown procedures, unless specific limit values have been defined for those situations.

4. Sampling and analysis of all pollutants shall be carried out according to the standards laid down by the Comité européen de normalisation (CEN), the International Organization for Standardization (ISO), or the corresponding United States or Canadian reference methods. While awaiting the development of CEN or ISO standards, national standards shall apply.

5. For verification purposes, the interpretation of measurement results in relation to the limit value must also take into account the inaccuracy of the measurement method. A limit value is considered to be met if the result of the measurement, from which the inaccuracy of the measurement method is subtracted, does not exceed it.

6. Emissions of different congeners of PCDD/F are given in toxicity equivalents (TE) in comparison to 2,3,7,8-TCDD using the system proposed by the NATO Committee on the Challenges of Modern Society (NATO-CCMS) in 1988.

II. LIMIT VALUES FOR MAJOR STATIONARY SOURCES

7. The following limit values, which refer to 11% O_2 concentration in flue gas, apply to the following incinerator types:

Municipal solid waste (burning more than 3 tonnes per hour)

0.1 ng TE/m^3

Medical solid waste (burning more than 1 tonne per hour)

0.5 ng TE/m^3

Hazardous waste (burning more than 1 tonne per hour)

0.2 ng TE/m^3

ANNEX V

BEST AVAILABLE TECHNIQUES TO CONTROL EMISSIONS OF PERSISTENT ORGANIC POLLUTANTS FROM MAJOR STATIONARY SOURCES

I. INTRODUCTION

1. The purpose of this annex is to provide the Parties to the Convention with guidance in identifying best available techniques to allow them to meet the obligations in article 3, paragraph 5, of the Protocol.

2. "Best available techniques" (BAT) means the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and their impact on the environment as a whole:

– 'Techniques' includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;

– 'Available' techniques means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the territory of the Party in question, as long as they are reasonably accessible to the operator;

– 'Best' means most effective in achieving a high general level of protection of the environment as a whole.

In determining the best available techniques, special consideration should be given, generally or in specific cases, to the factors below, bearing in mind the likely costs and benefits of a measure and the principles of precaution and prevention:

– The use of low-waste technology;

– The use of less hazardous substances;

– The furthering of recovery and recycling of substances generated and used in the process and of waste;

– Comparable processes, facilities or methods of operation which have been tried with success on an industrial scale;

– Technological advances and changes in scientific knowledge and understanding;

– The nature, effects and volume of the emissions concerned;

– The commissioning dates for new or existing installations;

– The time needed to introduce the best available technique;

– The consumption and nature of raw materials (including water) used in the process and its energy efficiency;

– The need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it;

– The need to prevent accidents and to minimize their consequences for the environment.

The concept of best available techniques is not aimed at the prescription of any specific technique or technology, but at taking into account the technical characteristics of the installation concerned, its geographical location and the local environmental conditions.

3. Information regarding the effectiveness and costs of control measures is based on documents received and reviewed by the Task Force and the Preparatory Working Group on POPs. Unless otherwise indicated, the techniques listed are considered to be well established on the basis of operational experience.

4. Experience with new plants incorporating low-emission techniques, as well as with retrofitting of existing plants, is continuously growing. The regular elaboration and amendment of the annex will therefore be necessary. Best available techniques (BAT) identified for new plants can usually be applied to existing plants provided there is an adequate transition period and they are adapted.

5. The annex lists a number of control measures which span a range of costs and efficiencies. The choice of measures for any particular case will depend on a number of factors, including economic circumstances, technological infrastructure and capacity, and any existing air pollution control measures.

6. The most important POPs emitted from stationary sources are:

(a) Polychlorinated dibenzo-p-dioxins/furans (PCDD/F);

(b) Hexachlorobenzene (HCB);

(c) Polycyclic aromatic hydrocarbons (PAHs).

Relevant definitions are provided in annex III to the present Protocol.

II. MAJOR STATIONARY SOURCES OF POP EMISSIONS

7. PCDD/F are emitted from thermal processes involving organic matter and chlorine as a result of incomplete combustion or chemical reactions. Major stationary sources of PCDD/F may be as follows:

(a) Waste incineration, including co-incineration;

(b) Thermal metallurgical processes, e.g. production of aluminium and other non-ferrous metals, iron and steel;

(c) Combustion plants providing energy;

(d) Residential combustion; and

(e) Specific chemical production processes releasing intermediates and by-products.

8. Major stationary sources of PAH emissions may be as follows:

(a) Domestic wood and coal heating;

(b) Open fires such as refuse burning, forest fires and after-crop burning;

(c) Coke and anode production;

(d) Aluminium production (via Soederberg process); and

(e) Wood preservation installations, except for a Party for which this category does not make a significant contribution to its total emissions of PAH (as defined in annex III).

9. Emissions of HCB result from the same type of thermal and chemical processes as those emitting PCDD/F, and HCB is formed by a similar mechanism. Major sources of HCB emissions may be as follows:

(a) Waste incineration plants, including co-incineration;

(b) Thermal sources of metallurgical industries; and

(c) Use of chlorinated fuels in furnace installations.

III. GENERAL APPROACHES TO CONTROLLING EMISSIONS OF POPs

10. There are several approaches to the control or prevention of POP emissions from stationary sources. These include the replacement of relevant feed materials, process modifications (including maintenance and operational control) and retrofitting existing plants. The following list provides a general indication of available measures, which may be implemented either separately or in combination:

(a) Replacement of feed materials which are POPs or where there is a direct link between the materials and POP emissions from the source;

(b) Best environmental practices such as good housekeeping, preventive maintenance programmes, or process changes such as closed systems (for instance in cokeries or use of inert electrodes for electrolysis);

(c) Modification of process design to ensure complete combustion, thus preventing the formation of persistent organic pollutants, through the control of parameters such as incineration temperature or residence time;

(d) Methods for flue-gas cleaning such as thermal or catalytic incineration or oxidation, dust precipitation, adsorption;

(e) Treatment of residuals, wastes and sewage sludge by, for example, thermal treatment or rendering them inert.

11. The emission levels given for different measures in tables 1, 2, 4, 5, 6, 8, and 9 are generally case-specific. The figures or ranges give the emission levels as a percentage of the emission limit values using conventional techniques.

12. Cost-efficient considerations may be based on total costs per year per unit of abatement (including capital and operational costs). POP emission reduction costs should also be considered within the framework of the overall process economics, e.g. the impact of control measures and costs of production. Given the many influencing factors, investment and operating cost figures are highly case-specific.

IV. CONTROL TECHNIQUES FOR THE REDUCTION OF PCDD/F EMISSIONS

A. Waste incineration

13. Waste incineration includes municipal waste, hazardous waste, medical waste and sewage sludge incineration.

14. The main control measures for PCDD/F emissions from waste incineration facilities are:

(a) Primary measures regarding incinerated wastes;

(b) Primary measures regarding process techniques;

(c) Measures to control physical parameters of the combustion process and waste gases (e.g. temperature stages, cooling rate, O_2 content, etc.);

(d) Cleaning of the flue gas; and

(e) Treatment of residuals from the cleaning process.

15. The primary measures regarding the incinerated wastes, involving the management of feed material by reducing halogenated substances and replacing them by non-halogenated alternatives, are not appropriate for municipal or hazardous waste incineration. It is more effective to modify the incineration process and install secondary measures for flue-gas cleaning. The management of feed material is a useful primary measure for waste reduction and has the possible added benefit of recycling. This may result in indirect PCDD/F reduction by decreasing the waste amounts to be incinerated.

16. The modification of process techniques to optimize combustion conditions is an important and effective measure for the reduction of PCDD/F emissions (usually 850°C or higher, assessment of oxygen supply depending on the heating value and consistency of the wastes, sufficient residence time - - 850°C for ca. 2 sec - - and turbulence of the gas, avoidance of cold gas regions in the incinerator, etc.). Fluidized bed incinerators keep a lower temperature than 850°C with adequate emission results. For existing incinerators this would normally involve redesigning and/or replacing a plant - - an option which may not be economically viable in all countries. The carbon content in ashes should be minimized.

17. Flue gas measures. The following measures are possibilities for lowering reasonably effectively the PCDD/F content in the flue gas. The *de novo* synthesis takes place at about 250 to 450°C. These measures are a prerequisite for further reductions to achieve the desired levels at the end of the pipe:

(a) Quenching the flue gases (very effective and relatively inexpensive);

(b) Adding inhibitors such as triethanolamine or triethylamine (can reduce oxides of nitrogen as well), but side-reactions have to be considered for safety reasons;

(c) Using dust collection systems for temperatures between 800 and 1000°C, e.g. ceramic filters and cyclones;

(d) Using low-temperature electric discharge systems; and

(e) Avoiding fly ash deposition in the flue gas exhaust system.

18. Methods for cleaning the flue gas are:

(a) Conventional dust precipitators for the reduction of particle-bound PCDD/F;

(b) Selective catalytic reduction (SCR) or selective non-catalytic reduction (SNCR);

(c) Adsorption with activated charcoal or coke in fixed or fluidized systems;

(d) Different types of adsorption methods and optimized scrubbing systems with mixtures of activated charcoal, open hearth coal, lime and limestone solutions in fixed bed, moving bed and fluidized bed reactors. The collection efficiency for gaseous PCDD/F can be improved with the use of a suitable pre-coat layer of activated coke on the surface of a bag filter;

(e) H_2O_2-oxidation; and

(f) Catalytic combustion methods using different types of catalysts (i.e. Pt/Al_2O_3 or copper-chromite catalysts with different promoters to stabilize the surface area and to reduce ageing of the catalysts).

19. The methods mentioned above are capable of reaching emission levels of 0.1 ng TE/m^3 PCDD/F in the flue gas. However, in systems using activated charcoal or coke adsorbers/filters care must be taken to ensure that fugitive carbon dust does not increase PCDD/F emissions downstream. Also, it should be noted that adsorbers and dedusting installations prior to catalysts (SCR technique) yield PCDD/F-laden residues, which need to be reprocessed or require proper disposal.

20. A comparison between the different measures to reduce PCDD/F in flue gas is very complex. The resulting matrix includes a wide range of industrial plants with different capacities and configuration. Cost parameters include the reduction measures for minimizing other pollutants as well, such as heavy metals (particle-bound or not particle-bound). A direct relation for the reduction in PCDD/F emissions alone cannot, therefore, be isolated in most cases. A summary of the available data for the various control measures is given in table 1.

Table 1: Comparison of different flue-gas cleaning measures and process modifications in waste incineration plants to reduce PCDD/F emissions

Management options	Emission level (%) [a/]	Estimated costs	Management risks
Primary measures by modification of feed materials:			
– Elimination of precursors and chlorine-containing feed materials; and	Resulting emission level not quantified; seems not to be linearly dependent on the amount of the feed material.		Pre-sorting of feed material not effective; only parts could be collected; other chlorine-containing material, for instance kitchen salt, paper, etc., cannot be avoided. For hazardous chemical waste this is not desirable.
– Management of waste streams.			Useful primary measure and feasible in special cases (for instance, waste oils, electrical components, etc.) with the possible added benefit of recycling of the materials.
Modification of process technology:			
– Optimized combustion conditions;			Retrofitting of the whole process needed.
– Avoidance of temperatures below 850°C and cold regions in flue gas;			
– Sufficient oxygen content; control of oxygen input depending on the heating value and consistency of feed material; and			
– Sufficient residence time and turbulence.			
Flue gas measures:			
Avoiding particle deposition by:			
– Soot cleaners, mechanical rappers, sonic or steam soot blowers.			Steam soot blowing can increase PCDD/F formation rates.
Dust removal, generally in waste incinerators:	< 10	Medium	Removal of PCDD/F adsorbed onto particles. Removal methods of particles in hot flue gas streams used only in pilot plants.
– Fabric filters;	1 – 0.1	Higher	Use at temperatures < 150°C.
– Ceramic filters;	Low efficiency		Use at temperatures 800-1000°C.
– Cyclones; and	Low efficiency	Medium	
– Electrostatic precipitation.	Medium efficiency		Use at a temperature of 450°C; promotion of the *de novo* synthesis of PCDD/F possible, higher NOx emissions, reduction of heat recovery.

Management options	Emission level (%) [a/]	Estimated costs	Management risks
Catalytic oxidation. Gas quenching. High-performance adsorption unit with added activated charcoal particles (electrodynamic venturi).			Use at temperatures of 800-1000°C. Separate gas phase abatement necessary.
Selective catalytic reduction (SCR).		High investment and low operating costs	NOx reduction if NH_3 is added; high space demand, spent catalysts and residues of activated carbon (AC) or lignite coke (ALC) may be disposed of, catalysts can be reprocessed by manufacturers in most cases, AC and ALC can be combusted under strictly controlled conditions.
Different types of wet and dry adsorption methods with mixtures of activated charcoal, open-hearth coke, lime and limestone solutions in fixed bed, moving bed and fluidized bed reactors:			
– Fixed bed reactor, adsorption with activated charcoal or open-hearth coke; and	< 2 (0.1 ng TE/m^3)	High in-vestment, medium operating costs	Removal of residuals, high demand of space.
– Entrained flow or circulating fluidized bed reactor with added activated coke/lime or limestone solutions and subsequent fabric filter.	< 10 (0.1 ng TE/m^3)	Low in-vestment, medium operating costs	Removal of residuals.
Addition of H_2O_2.	2 – 5 (0.1 ng TE/m^3)	Low in-vestment, low operating costs	

[a/] Remaining emission compared to unreduced mode.

21. Medical waste incinerators may be a major source of PCDD/F in many countries. Specific medical wastes such as human anatomical parts, infected waste, needles, blood, plasma and cytostatica are treated as a special form of hazardous waste, while other medical wastes are frequently incinerated on-site in a batch operation. Incinerators operating with batch systems can meet the same requirements for PCDD/F reduction as other waste incinerators.

22. Parties may wish to consider adopting policies to encourage the incineration of municipal and medical waste in large regional facilities rather than in smaller ones. This approach may make the application of BAT more cost-effective.

23. The treatment of residuals from the flue-gas cleaning process. Unlike incinerator ashes, these residuals contain relatively high concentrations of heavy metals, organic pollutants (including PCDD/F), chlorides and sulphides. Their method of disposal, therefore, has to be well controlled. Wet scrubber systems in particular produce large quantities of acidic, contaminated liquid waste. Some special treatment methods exist. They include:

(a) The catalytic treatment of fabric filter dusts under conditions of low temperatures and lack of oxygen;

(b) The scrubbing of fabric filter dusts by the 3-R process (extraction of heavy metals by acids and combustion for destruction of organic matter);

(c) The vitrification of fabric filter dusts;

(d) Further methods of immobilization; and

(e) The application of plasma technology.

B. Thermal processes in the metallurgical industry

24. Specific processes in the metallurgical industry may be important remaining sources of PCDD/F emissions. These are:

(a) Primary iron and steel industry (e.g. blast furnaces, sinter plants, iron pelletizing);

(b) Secondary iron and steel industry; and

(c) Primary and secondary non-ferrous metal industry (production of copper).

PCDD/F emission control measures for the metallurgical industries are summarized in table 2.

25. Metal production and treatment plants with PCDD/F emissions can meet a maximum emission concentration of 0.1 ng TE/m^3 (if waste gas volume flow > 5000 m^3/h) using control measures.

Table 2: Emission reduction of PCDD/F in the metallurgical industry

Management options	Emission level (%) [a/]	Estimated costs	Management risks
Sinter plants			
Primary measures:			
– Optimization/encapsulation of sinter conveying belts;		Low	Not 100% achievable
– Waste gas recirculation e.g. emission optimized sintering (EOS) reducing waste gas flow by ca. 35% (reduced costs of further secondary measures by the reduced waste gas flow), cap. 1 million Nm^3/h;	40	Low	
Secondary measures:			
– Electrostatic precipitation + molecular sieve;	Medium efficiency	Medium	
– Addition of limestone/activated carbon mixtures;	High efficiency (0.1 ng TE/m^3)	Medium	
– High-performance scrubbers – existing installation: AIRFINE (Voest Alpine Stahl Linz) since 1993 for 600 000 Nm^3/h; second installation planned in the Netherlands (Hoogoven) for 1998.	High efficiency emission reduction to 0.2-0.4 ng TE/m^3	Medium	0.1 ng TE/m^3 could be reached with higher energy demand; no existing installation.
Non-ferrous production (e.g. copper)			
Primary measures:			
– Pre-sorting of scrap, avoidance of feed material like plastics and PVC-contaminated scrap, stripping of coatings and use of chlorine-free insulating materials;		Low	
Secondary measures:			
– Quenching the hot waste gases;	High efficiency	Low	
– Use of oxygen or of oxygen-enriched air in firing, oxygen injection in the shaft kiln (providing complete combustion and minimization of waste gas volume);	5 – 7 (1.5-2 TE/m^3)	High	
– Fixed bed reactor or fluidized jet stream reactor by adsorption with activated charcoal or open-hearth coal dust;	(0.1 ng TE/m^3)	High	
– Catalytic oxidation; and	(0.1 ng TE/m^3)	High	
– Reduction of residence time in the critical region of temperature in the waste gas system.			
Iron and steel production			
Primary measures:			
– Cleaning of the scrap from oil prior to charging of production vessels;		Low	Cleaning solvents have to be used.
– Elimination of organic tramp materials such as oils, emulsions, greases, paint and plastics from feedstock cleaning;		Low	
– Lowering of the specific high waste gas volumes;		Medium	
– Separate collection and treatment of emissions from loading and discharging;.		Low	
Secondary measures:			
– Separate collection and treatment of emissions from loading and discharging; and		Low	
– Fabric filter in combination with coke injection.	< 1	Medium	

Management options	Emission level (%) [a/]	Estimated costs	Management risks
Secondary aluminium production			
Primary measures:			
– Avoidance of halogenated material (hexachloroethane);		Low	
– Avoidance of chlorine-containing lubricants (for instance chlorinated paraffins); and		Low	
– Clean-up and sorting of dirty scrap charges, e.g. by swarf decoating and drying, swim-sink separation techniques and whirling stream deposition;			
Secondary measures:			
– Single– and multi-stage fabric filter with added activation of limestone/ activated carbon in front of the filter;	< 1 (0.1 ng TE/m^3)	Medium/ high	
– Minimization and separate removal and purification of differently contaminated waste gas flows;		Medium/ high	
– Avoidance of particulate deposition from the waste gas and promotion of rapid passing of the critical temperature range; and		Medium/ high	
– Improved pretreatment of aluminium scrap shredders by using swim-sink separation techniques and grading through whirling stream deposition.		Medium/ high	

[a/] Remaining emission compared to unreduced mode.

Sinter plants

26. Measurements at sinter plants in the iron and steel industry have generally shown PCDD/F emissions in the range of 0.4 to 4 ng TE/m^3. A single measurement at one plant without any control measures showed an emission concentration of 43 ng TE/m^3.

27. Halogenated compounds may result in the formation of PCDD/F if they enter sinter plants in the feed materials (coke breeze, salt content in the ore) and in added recycled material (e.g. millscale, blast furnace top gas dust, filter dusts and sludges from waste water treatment). However, similarly to waste incineration, there is no clear link between the chlorine content of the feed materials and emissions of PCDD/F. An appropriate measure may be the avoidance of contaminated residual material and de-oiling or degreasing of millscale prior to its introduction into the sinter plant.

28. The most effective PCDD/F emission reduction can be achieved using a combination of different secondary measures, as follows:

(a) Recirculating waste gas significantly reduces PCDD/F emissions. Furthermore, the waste gas flow is reduced significantly, thereby reducing the cost of installing any additional end-of-pipe control systems;

(b) Installing fabric filters (in combination with electrostatic precipitators in some cases) or electrostatic precipitators with the injection of activated carbon/open-hearth coal/limestone mixtures into the waste gas;

(c) Scrubbing methods have been developed which include pre-quenching of the waste gas, leaching by high-performance scrubbing and separation by drip deposition. Emissions of 0.2 to 0.4 ng TE/m^3 can be achieved. By adding suitable adsorption agents like lignite coal cokes/coal slack, an emission concentration of 0.1 ng TE/m^3 can be reached.

Primary and secondary production of copper

29. Existing plants for the primary and secondary production of copper can achieve a PCDD/F emission level of a few picograms to 2 ng TE/m^3 after flue-gas cleaning. A single copper shaft furnace emitted up to 29 ng TE/m^3 PCDD/F before optimization of the aggregates. Generally, there is a wide range of PCDD/F emission values from these plants because of the large differences in raw materials used in differing aggregates and processes.

30. Generally, the following measures are suitable for reducing PCDD/F emissions:

(a) Pre-sorting scrap;

(b) Pretreating scrap, for example stripping of plastic or PVC coatings, pretreating cable scrap using only cold/mechanical methods;

(c) Quenching hot waste gases (providing utilization of heat), to reduce residence time in the critical region of temperature in the waste gas system;

(d) Using oxygen or oxygen-enriched air in firing, or oxygen injection in the shaft kiln (providing complete combustion and minimization of waste gas volume);

(e) Adsorption in a fixed bed reactor or fluidized jet stream reactor with activated charcoal or open-hearth coal dust; and

(f) Catalytic oxidation.

Production of steel

31. PCDD/F emissions from converter steelworks for steel production and from hot blast cupola furnaces, electric furnaces and electric arc furnaces for the melting of cast iron are significantly lower than 0.1 ng TE/m^3. Cold-air furnaces and rotary tube furnaces (melting of cast iron) have higher PCDD/F emissions.

32. Electric arc furnaces used in secondary steel production can achieve an emission concentration value of 0.1 ng TE/m^3 if the following measures are used:

(a) Separate collection of emissions from loading and discharging; and

(b) Use of a fabric filter or an electrostatic precipitator in combination with coke injection.

33. The feedstock to electric arc furnaces often contains oils, emulsions or greases. General primary measures for PCDD/F reduction can be sorting, de-oiling and de-coating of scraps, which may contain plastics, rubber, paints, pigments and vulcanizing additives.

Smelting plants in the secondary aluminium industry

34. PCDD/F emissions from smelting plants in the secondary aluminium industry are in the range of approximately 0.1 to 14 ng TE/m^3. These levels depend on the type of smelting aggregates, materials used and waste gas purification techniques employed.

35. In summary, single– and multi-stage fabric filters with the addition of limestone/activated carbon/open-hearth coal in front of the filter meet the emission concentration of 0.1 ng TE/m^3, with reduction efficiencies of 99%.

36. The following measures can also be considered:

(a) Minimizing and separately removing and purifying differently contaminated waste gas flows;

(b) Avoiding waste gas particle deposition;

(c) Rapidly passing the critical temperature range;

(d) Improving the pre-sorting of scrap aluminium from shredders by using swim-sink separation techniques and grading through whirling stream deposition; and

(e) Improving the pre-cleaning of scrap aluminium by swarf decoating and swarf drying.

37. Options (d) and (e) are important because it is unlikely that modern fluxless smelting techniques (which avoid halide salt fluxes) will be able to handle the low-grade scrap that can be used in rotary kilns.

38. Discussions are continuing under the Convention for the Protection of the Marine Environment of the North-east Atlantic regarding the revision of an earlier recommendation to phase out the use of hexachloroethane in the aluminium industry.

39. The melt can be treated using state-of-the-art technology, for example with nitrogen/chlorine mixtures in the ratio of between 9:1 and 8:2, gas injection equipment for fine dispersion and nitrogen pre– and post-flushing and vacuum degreasing. For nitrogen/chlorine mixtures, a PCDD/F emission concentration of about 0.03 ng TE/m^3 was measured (as compared to values of > 1 ng TE/m^3 for treatment with chlorine only). Chlorine is required for the removal of magnesium and other undesired components.

C. Combustion of fossil fuels in utility and industrial boilers

40. In the combustion of fossil fuels in utility and industrial boilers (>50 MW thermal capacity), improved energy efficiency and energy conservation will result in a decline in the emissions of all pollutants because of reduced fuel requirements. This will also result in a reduction in PCDD/F emissions. It would not be cost-effective to remove chlorine from coal or oil, but in any case the trend towards gas-fired stations will help to reduce PCDD/F emissions from this sector.

41. It should be noted that PCDD/F emissions could increase significantly if waste material (sewage sludge, waste oil, rubber wastes, etc.) is added to the fuel. The combustion of wastes for energy supply should be undertaken only in installations using waste gas purification systems with highly efficient PCDD/F reduction (described in section A above).

42. The application of techniques to reduce emissions of nitrogen oxides, sulphur dioxide and particulates from the flue gas can also remove PCDD/F emissions. When using these techniques, PCDD/F removal efficiencies will vary from plant to plant. Research is ongoing to develop PCDD/F removal techniques, but until such techniques are available on an industrial scale, no best available technique is identified for the specific purpose of PCDD/F removal.

D. Residential combustion

43. The contribution of residential combustion appliances to total emissions of PCDD/F is less significant when approved fuels are properly used. In addition, large regional differences in emissions can occur due to the type and quality of fuel, geographical appliance density and usage.

44. Domestic fireplaces have a worse burn-out rate for hydrocarbons in fuels and waste gases than large combustion installations. This is especially true if they use solid fuels such as wood and coal, with PCDD/F emission concentrations in the range of 0.1 to 0.7 ng TE/m^3.

45. Burning packing material added to solid fuels increases PCDD/F emissions. Even though it is prohibited in some countries, the burning of rubbish and packing material may occur in private households. Due to increasing disposal charges, it must be recognized that household waste materials are being burned in domestic firing installations. The use of wood with the addition of waste packing material can lead to an increase in PCDD/F emissions from 0.06 ng TE/m^3 (exclusively wood) to 8 ng TE/m^3 (relative to 11% O_2 by volume). These results have been confirmed by investigations in several countries in which up to 114 ng TE/m^3 (with respect to 13% oxygen by volume) was measured in waste gases from residential combustion appliances burning waste materials.

46. The emissions from residential combustion appliances can be reduced by restricting the input materials to good-quality fuel and avoiding the burning of waste, halogenated plastics and other materials. Public information programmes for the purchasers/operators of residential combustion appliances can be effective in achieving this goal.

E. Firing installations for wood (<50 MW capacity)

47. Measurement results for wood-firing installations indicate that PCDD/F emissions above 0.1 ng TE/m^3 occur in waste gases especially during unfavourable burn-out conditions and/or when the substances burned have a higher content of chlorinated compounds than normal untreated wood. An indication of poor firing is the total carbon concentration in the waste gas. Correlations have been found between CO emissions, burn-out quality and PCDD/F emissions. Table 3 summarizes some emission concentrations and factors for wood-firing installations.

Table 3: Quantity-related emission concetrations and factors for wood-firing installations

Fuel	Emission concentration (ng TE/m^3)	Emission factor (ng TE/kg)	Emission factor (ng/GJ)
Natural wood (beech tree)	0.02 – 0.10	0.23 – 1.3	12 – 70
Natural wood chips from forests	0.07 – 0.21	0.79 – 2.6	43 – 140
Chipboard	0.02 – 0.08	0.29 – 0.9	16 – 50
Urban waste wood	2.7 – 14.4	26 – 173	1400 – 9400
Residential waste	114	3230	
Charcoal	0.03		

48. The combustion of urban waste wood (demolition wood) in moving grates leads to relatively high PCDD/F emissions, compared to non-waste wood sources. A primary measure for emission reduction is to avoid the use of treated waste wood in wood-firing installations. Combustion of treated wood should be undertaken only in installations with the appropriate flue-gas cleaning to minimize PCDD/F emissions.

V. CONTROL TECHNIQUES FOR THE REDUCTION OF PAH EMISSIONS

A. Coke production

49. During coke production, PAHs are released into the ambient air mainly:

(a) When the oven is charged through the charging holes;

(b) By leakages from the oven door, the ascension pipes and the charging hole lids; and

(c) During coke pushing and coke cooling.

50. Benzo(a)pyrene (BaP) concentration varies substantially between the individual sources in a coke battery. The highest BaP concentrations are found on the top of the battery and in the immediate vicinity of the doors.

51. PAH from coke production can be reduced by technically improving existing integrated iron and steel plants. This might entail the closure and replacement of old coke batteries and the general reduction in coke production, for instance by injecting high-value coal in steel production.

52. A PAH reduction strategy for coke batteries should include the following technical measures:

(a) Charging the coke ovens:

– Particulate matter emission reduction when charging the coal from the bunker into the charging cars;

– Closed systems for coal transfer when coal pre-heating is used;

– Extraction of filling gases and subsequent treatment, either by passing the gases into the adjacent oven or by passing via a collecting main to an incinerator and a subsequent dedusting device. In some cases the extracted filling gases may be burned on the charging cars, but the environmental performance and safety of these charging-car-based systems is less satisfactory. Sufficient suction should be generated by steam or water injection in the ascension pipes;

(b) Emissions at charging hole lids during coking operation should be avoided by:

– Using charging hole lids with highly efficient sealing;

– Luting the charging hole lids with clay (or equally effective material) after each charging operation;

– Cleaning the charging hole lids and frames before closing the charging hole;

– Keeping oven ceilings free from coal residuals;

(c) Ascension pipe lids should be equipped with water seals to avoid gas and tar emissions, and the proper operation of the seals should be maintained by regular cleaning;

(d) Coke oven machinery for operating the coke oven doors should be equipped with systems for cleaning the seals' surfaces on the oven door frames and oven doors;

(e) Coke oven doors:

– Highly effective seals should be used (e.g. spring-loaded membrane doors);

– Seals on the oven doors and door frames should be cleaned thoroughly at every handling operation;

– Doors should be designed in a manner that allows the installation of particulate matter extraction systems with connection to a dedusting device (via a collecting main) during pushing operations;

(f) The coke transfer machine should be equipped with an integrated hood, stationary duct and stationary gas cleaning system (preferably a fabric filter);

(g) Low-emission procedures should be applied for coke cooling, e.g. dry coke cooling. The replacement of a wet quenching process by dry coke cooling should be preferred, so long as the generation of waste water is avoided by using a closed circulation system. The dusts generated when dry quenched coke is handled should be reduced.

53. A coke-making process referred to as "non-recovery coke-making" emits significantly less PAH than the more conventional by-product recovery process. This is because the ovens operate under negative pressure, thereby eliminating leaks to the atmosphere from the coke oven doors. During coking, the raw coke oven gas is removed from the ovens by a natural draught, which maintains a negative pressure in the ovens. These ovens are not designed to recover the chemical by-products from raw coke oven gas. Instead, the offgases from the coking process (including PAH) are burned efficiently at high temperatures and with long residence times. The waste heat from this incineration is used to provide the energy for coking, and excess heat may be used to generate steam. The economics of this type of coking operation may require a cogeneration unit to produce electricity from the excess steam. Currently there is only one non-recovery coke plant operating in the United States, and one is in operation in Australia. The process is basically a horizontal sole-flue non-recovery coke oven with an incineration chamber adjoining two ovens. The process provides for alternate charging and coking schedules between the two ovens. Thus, one oven is always providing the incineration chamber with coke gases. The coke gas combustion in the incineration chamber provides the necessary heat source. The incineration chamber design provides the necessary dwell time (approximately 1 second) and high temperatures (minimum of 900°C).

54. An effective monitoring programme for leakages from coke oven door seals, ascension pipes and charging hole lids should be operated. This implies the monitoring and recording of leakages and immediate repair or maintenance. A significant reduction of diffuse emissions can thus be achieved.

55. Retrofitting existing coke batteries to facilitate condensation of flue gases from all sources (with heat recovery) results in a PAH reduction of 86% to more than 90% in air (without regard to waste water treatment). Investment costs can be amortized in five years, taking into account recovered energy, heated water, gas for synthesis and saved cooling water.

56. Increasing coke oven volumes results in a decrease in the total number of ovens, oven door openings (amount of pushed ovens per day), number of seals in a coke battery and consequently PAH emissions. Productivity increases in the same way by decreasing operating and personnel costs.

57. Dry coke cooling systems require a higher investment cost than wet methods. Higher operating costs can be compensated for by heat recovery in a process of pre-heating the coke. The energy efficiency of a combined dry coke cooling/coal pre-heating system rises from 38 to 65%. Coal pre-heating boosts productivity by 30%. This can be raised to 40% because the coking process is more homogeneous.

58. All tanks and installations for the storage and treatment of coal tar and coal tar products must be equipped with an efficient vapour recovery return and/or vapour destruction system. The operating costs of vapour destruction systems can be reduced in an autothermal after-burning mode if the concentration of the carbon compounds in the waste is high enough.

59. Table 4 summarizes PAH emission reduction measures in coke production plants.

Table 4: PAH emission control for coke production

Management options	Emission level (%) [a]	Estimated costs	Management risks
Retrofitting of old plants with condensation of emitted flue gases from all sources includes the following measures:	Total < 10 (without waste water)	High	Emissions to waste water by wet quenching are very high. This method should be applied only if the waste is reused in a closed cycle.
– Evacuation and after-burning of the filling gases during charging of ovens or passing the gases into the adjacent oven as far as possible;	5	(Amortization of investment costs, taking into account energy recovery, heated water, gas for synthesis and saved cooling water, may be 5 years.)	
– Emissions at charging hole lids should be avoided as far as possible, e.g. by special hole lid construction and highly effective sealing methods. Coke oven doors with highly effective sealings should be used. Cleaning of charging hole lids and frames before closing the charging hole;	< 5		
– Waste gases from pushing operations should be collected and fed to a dedusting device;	< 5		
– Quenching during coke cooling by wet methods only if properly applied without waste water.			
Low emission procedures for coke cooling, e.g. dry coke cooling.	No emissions into water	Higher investment costs than for wet cooling (but lower costs by preheating of coke and use of waste heat.)	

Management options	Emission level (%)[a/]	Estimated costs	Management risks
Increasing the use of high-volume ovens to lower the humber of openings and the surface of sealing areas.	Considerable	Investment about 10% higher than conventional plants	In most cases total retrofitting or the installation of a new cokery is needed.

[a/] Remaining emission compared to unreduced mode.

B. Anode production

60. PAH emissions from anode production have to be dealt with in a similar fashion as those from coke production.

61. The following secondary measures for emission reduction of PAH-contaminated dust are used:

(a) Electrostatic tar precipitation;

(b) Combination of a conventional electrostatic tar filter with a wet electrostatic filter as a more efficient technical measure;

(c) Thermal after-burning of the waste gases; and

(d) Dry scrubbing with limestone/petroleum coke or aluminum oxide (Al_2O_3).

62. The operating costs in thermal after-burning can be reduced in an autothermal after-burning mode if the concentration of carbon compounds in the waste gas is high enough. Table 5 summarizes PAH emission control measures for anode production.

Table 5: PAH emission control for anode production

Management options	Emission level (%)[a/]	Estimated costs	Management risks
Modernization of old plants by reducing diffuse emissions with the following measures: – Reduction of leakages; – Installation of flexible sealants at the oven doors; – Evacuation of filling gases and subsequent treatment, either by passing the gases into the adjacent oven or by passing the gases via a collecting main to an incinerator and a subsequent dedusting device on the ground; – Operating and coke oven cooling systems; and – Evacuation and purification of particulate emissions from coke.	3-10	High	
Established technologies for anode production in the Netherlands: – New kiln with dry scrubber (with limestone/petroleum cokes or with aluminium) – Effluent recycling in paste unit.	45-50		Implemented in the Netherlands in 1990. Scrubbing with limestone or petroleum cokes is effective for reducing PAH; with aluminium not know.
BAT:			
– Electrostatic dust precipitation; and	2-5		Regular cleaning of tar is needed.
– Thermal after-burning.	15	Lower operating costs in an autothermal mode.	Operating in autothermal mode only if the concentration of PAH in the waste gas is high.

[a/] Remaining emission compared to unreduced mode.

C. Aluminium industry

63. Aluminium is produced from aluminium oxide (Al_2O_3) by electrolysis in pots (cells) electrically connected in series. Pots are classified as prebake or Soederberg pots, according to the type of the anode.

64. Prebake pots have anodes consisting of calcined (baked) carbon blocks, which are replaced after partial consumption. Soederberg anodes are baked in the cell, with a mixture of petroleum coke and coal tar pitch acting as a binder.

65. Very high PAH emissions are released from the Soederberg process. Primary abatement measures include modernization of existing plants and optimization of the processes, which could reduce PAH emissions by 70-90%. An emission level of 0.015 kg B(a)P/tonne of Al could be reached. Replacing the existing Soederberg cells by prebaked ones would require major reconstruction of the existing process, but would nearly eliminate the PAH emissions. The capital costs of such replacements are very high.

66. Table 6 summarizes PAH emission control measures for aluminium production.

Table 6: PAH emission control for aluminium production using the Soederberg process

Management options	Emission level (%) [a/]	Estimated costs	Management risks
Replacement of Soederberg electrodes by: – Prebaked electrodes (avoidance of pitch binders); – Inert anodes.	3-30	Higher costs for electrodes about US$ 800 million	Soederberg electrodes are cheaper than prebaked ones, because no anode baking plant is needed. Research is in progress, but expectations are low. Efficient operation and monitoring of emission are essential parts of emission control. Poor performance could cause significant diffuse emissions.
Closed prebake systems with point feeding of alumina and efficient process control, hoods covering the entire pot and allowing efficient collection of air pollutants.	1-5		
Soederberg pot with vertical contact bolts and waste gas collection systems.	> 10	Retrofit of Soederberg technology by encapsulation and modified feeding point: US$ 50,000 – 10,000 per furnace	Diffuse emissions occur during feeding, crust breaking and lifting of iron contact bolts to a higher position
Sumitomo technology (anode briquettes for VSS process).		Low – Medium	
Gas cleaning:			
– Electrostatic tar filters;	2-5	Low	High rate of sparking and electrical arcing;
– Combination of conventional electrostatic tar filters with electrostatic wet gas cleaning; – Thermal after-burning.	> 1	Medium	Wet gas-cleaning generates waste water.
Pitch use with higher melting point (HSS + VSS)	High	Medium Low – medium	
Use of dry scrubbing in existing HSS + VSS plants.		Medium – high	

[a/] Remaining emission compared to unreduced mode.

D. Residential combustion

67. PAH emissions from residential combustion can be detected from stoves or open fireplaces especially when wood or coal is used. Households could be a significant source of PAH emissions. This is the result of the use of fireplaces and small firing installations burning solid fuels in households. In some countries the usual fuel for stoves is coal. Coal-burning stoves emit less PAH than wood-burning ones, because of their higher combustion temperatures and more consistent fuel quality.

68. Furthermore, combustion systems with optimized operation characteristics (e.g. burning rate) effectively control PAH emissions from residential combustion. Optimized combustion conditions include optimized combustion chamber design and optimized supply of air. There are several techniques which optimize combustion conditions and reduce emissions. There is a significant difference in emissions between different techniques. A modern wood-fired boiler with a water accumulation tank, representing BAT, reduces the emission by more than 90% compared to an outdated boiler without a water accumulation tank. A modern boiler has three different zones: a fireplace for the gasification of wood, a gas combustion zone with ceramics or other material which allow temperatures of some 1000°C, and a convection zone. The convection part where the water absorbs the heat should be sufficiently long and effective so that the gas temperature can be reduced from 1000°C to 250°C or less. There are also several techniques to supplement old and outdated boilers, for example with water accumulation tanks, ceramic inserts and pellet burners.

69. Optimized burning rates are accompanied by low emissions of carbon monoxide (CO), total hydrocarbons (THC) and PAHs. Setting limits (type approval regulations) on the emission of CO and THCs also affects the emission of PAHs. Low emission of CO and THCs results in low emission of PAHs. Since measuring PAH is far more expensive than measuring CO, it is more cost-effective to set a limit value for CO and THCs. Work is continuing on a proposal for a CEN standard for coal– and wood-fired boilers up to 300 kW (see table 7).

Table 7: Draft CEN standards in 1997

Class		3	2	1	3	2	1	3	2	1
	Effect (kW)	CO			THC			Particulates		
Manual	< 50	5000	8000	25000	150	300	2000	150/125	180/150	200/180
	50-150	2500	5000	12500	100	200	1500	150/125	180/150	200/180
	>150-300	1200	2000	12500	100	200	1500	150/125	180/150	200/180
Automatic	< 50	3000	5000	15000	100	200	1750	150/125	180/150	200/180
	50-150	2500	4500	12500	80	150	1250	150/125	180/150	200/180
	> 150-300	1200	2000	12500	80	150	1250	150/125	180/150	200/180

Note: Emission levels in mg/m^3 at 10% O_2.

70. Emissions from residential wood combustion stoves can be reduced:

(a) For existing stoves, by public information and awareness programmes regarding proper stove operation, the use of untreated wood only, fuel preparation procedures and the correct seasoning of wood for moisture content; and

(b) For new stoves, by the application of product standards as described in the draft CEN standard (and equivalent product standards in the United States and Canada).

71. More general measures for PAH emission reduction are those related to the development of centralized systems for households and energy conservation such as improved thermal insulation to reduce energy consumption.

72. Information is summarized in table 8.

Table 8: PAH emission control for residential combustions

Management options	Emission level (%)[a/]	Estimated costs	Management risks
Use of dried coal and wood (dried wood is wood stored for at least 18-24 months).	High effectiveness		
Use of dried coal.	High effectiveness		
Design of heating systems for solid fuels to provide optimized complete burning conditions: – Gasification zone; – Combustion with ceramics; – Effective convection zone.	55	Medium	Negotiations have to be held with stove manufacturers to introduce an approval scheme for stoves.

Management options	Emission level (%)[a/]	Estimated costs	Management risks
Water accumulation tank. **Technical instructions for efficient operation.** **Public information programme concerning the use of wood-burning stoves.**	30 – 40	Low	Might be achieved also by vigorous public education, combined with practical instructions and stove type regulation.

[a/] Remaining emission compared to unreduced mode.

E. Wood preservation installations

73. Wood preservation with PAH-containing coal-tar products may be a major source of PAH emissions to the air. Emissions may occur during the impregnation process itself as well as during storage, handling and use of the impregnated wood in the open air.

74. The most widely used PAH-containing coal-tar products are carbolineum and creosote. Both are coal tar distillates containing PAHs for the protection of timber (wood) against biological attack.

75. PAH emissions from wood preservation, installations and storage facilities may be reduced using several approaches, implemented either separately or in combination, such as:

(a) Requirements on storage conditions to prevent pollution of soil and surface water by leached PAH and contaminated rainwater (e.g. storage sites impermeable to rainwater, roof cover, reuse of contaminated water for the impregnation process, quality demands for the material produced);

(b) Measures to reduce atmospheric emissions at impregnation plants (e.g. the hot wood should be cooled down from 90°C to 30°C at least before transport to storage sites. However, an alternative method using pressure steam under vacuum conditions to impregnate the wood with creosote should be highlighted as BAT);

(c) The optimum loading of wood preservative, which gives adequate protection to the treated wood product *in situ*, can be regarded as a BAT as this will reduce the demand for replacements, thereby reducing emissions from the wood preservation installations;

(d) Using wood preservation products with a lower content of those PAHs that are POPs:

– Possibly using modified creosote which is taken to be a distillation fraction boiling between 270°C and 355°C, which reduces both the emissions of the more volatile PAHs and the heavier, more toxic PAHs;

– Discouraging the use of carbolineum would also reduce PAH emissions;

(e) Evaluating and then using, as appropriate, alternatives, such as those in table 9, that minimize reliance on PAH-based products.

76. Burning of impregnated wood gives rise to PAH emissions and other harmful substances. If burning does take place, it should be done in installations with adequate abatement techniques.

Table 9: Possible alternatives to wood preservation involving PAH-based products

Management options	Management risks
Use of alternative materials for application in construction:	Other environmental problems have to be evaluated such as:
– Sustainably produced hardwood (riverbanks, fences, gates);	– Availability of suitably produced wood;
– Plastics (horticulture posts);	– Emissions caused by the production and disposal of plastics, especially PVC.
– Concrete (railway sleepers);	
– Replacement of artificial constructions by natural ones (such as riverbanks, fences, etc.);	
– Use of untreated wood.	
There are several alterntive wood-preserving techniques in development which do not inlcude impregnation with PAH-based products.	

ANNEX VI

TIMESCALES FOR THE APPLICATION OF LIMIT VALUES AND BEST AVAILABLE TECHNIQUES TO NEW AND EXISTING STATIONARY SOURCES

The timescales for the application of limit values and best available techniques are:
(a) For new stationary sources: two years after the date of entry into force of the present Protocol;
(b) For existing stationary sources: eight years after the date of entry into force of the present Protocol. If necessary, this period may be extended for specific existing stationary sources in accordance with the amortization period provided for by national legislation.

ANNEX VII

RECOMMENDED CONTROL MEASURES FOR REDUCING EMISSIONS OF PERSISTENT ORGANIC POLLUTANTS FROM MOBILE SOURCES

1. Relevant definitions are provided in annex III to the present Protocol.

I. ACHIEVABLE EMISSION LEVELS FOR NEW VEHICLES AND FUEL PARAMETERS

A. Achievable emission levels for new vehicles

2. Diesel-fuelled passenger cars

Year	Reference mass	Limit values	
		Mass of hydrocarbons and NO_x	Mass of particulates
01. 1. 2000	All	0.56 g/km	0.05 g/km
01. 1. 2005 (indicative)	All	0.3 g/km	0.025 g/km

3. Heavy-duty vehicles

Year/test cycle	Limit values	
	Mass of hydrocarbons	Mass of particulates
01. 1. 2000/ESC cycle	0.66 g/kWh	0.1 g/kWh
01. 1. 2000/ETC cycle	0.85 g/kWh	0.16 g/kWh

4. Off-road engines

Step 1 (reference: ECE regulation No. 96) */

Net power (P) (kW)	Mass of hydrocarbons	Mass of particulates
$P \geq 130$	1.3 g/kWh	0.54 g/kWh
$75 \leq P < 130$	1.3 g/kWh	0.70 g/kWh
$37 \leq P < 75$	1.3 g/kWh	0.85 g/kWh

*/ "uniform provisions concerning the approval of compression ignition (C.I.) engines to be installed in agricultural and forestry tractors with regard to the emissions of pollutants by the engine". The regulation came into force on 15 December 1995 and its amendments came into force on 5 March 1997.

Step 2

Net power (P) (kW)	Mass of hydrocarbons	Mass of particulates
0 ≤ P < 18		
18 ≤ P < 37	1.5 g/kWh	0.8 g/kWh
37 ≤ P < 75	1.3 g/kWh	0.4 g/kWh
75 ≤ P < 130	1.0 g/KWh	0.3 g/kWh
130 ≤ P < 560	1.0 g/kWh	0.2 g/kWh

B. Fuel parameters

5. Diesel fuel

Parameter	Unit	Limits		Test method
		Minimum value (2000/2005)*/	Maximum value (2000/2005)*/	
Cetane number		51/N.S.	-	ISO 5165
Density at 15 °C	kg/m^3	-	845/N.S.	ISO 3675
Evaporated 95%	°C	-	360 /N.S.	ISO 3405
PAH	mass%	-	11/N.S.	prIP 391
Sulphur	ppm	-	350/50 **/	ISO 14956

N.S.: Not specified.
*/ 1 January of year specified.
**/ Indicative value.

II. RESTRICTION OF HALOGENATED SCAVENGERS, ADDITIVES IN FUELS AND LUBRICANTS

6. In some countries, 1,2-dibromomethane in combination with 1,2-dichloromethane is used as a scavenger in leaded petrol. Moreover, PCDD/F are formed during the combustion process in the engine. The application of three-way catalytic converters for cars will require the use of unleaded fuel. The addition of scavengers and other halogenated compounds to petrol and other fuels and to lubricants should be avoided as far as possible.

7. Table 1 summarizes measures for PCDD/F emission control from the exhaust from road transport motor vehicles.

Table 1: PCDD/F emission control for the exhaust from road transport motor vehicles

Management options	Management risks
Avoiding adding halogenated compounds to fuels – 1,2-dichloromethane – 1,2-dichloromethane and corresponding bromo compounds as scavengers in leaded fuels for spark ignition engines (Bromo compounds may lead to the formation of brominated dioxins or furans.) Avoiding halogenated additives in fuels and lubricants.	Halogenated scavengers will be phased out as the market for leaded petrol shrinks because of the increasing use of closed-loop three-way catalytic converters with spark ignition engines

III. CONTROL MEASURES FOR EMISSIONS OF POPs FROM MOBILE SOURCES

A. POP emissions from motor vehicles

8. POP emissions from motor vehicles occur as particle-bound PAHs emitted from diesel-fuelled vehicles. To a minor extent PAHs are also emitted by petrol-fuelled vehicles.

9. Lubrication oil and fuels may contain halogenated compounds as a result of additives or the production process. These compounds may be transformed during combustion into PCDD/F and subsequently emitted with the exhaust gases.

B. Inspection and maintenance

10. For diesel-fuelled mobile sources, the effectiveness of the control of emissions of PAHs may be ensured through programmes to test the mobile sources periodically for particulate emissions, opacity during free acceleration, or equivalent methods.

11. For petrol-fuelled mobile sources, the effectiveness of the control of emissions of PAHs (in addition to other exhaust components) may be ensured through programmes to test periodically the fuel metering and the efficiency of the catalytic converter.

C. Techniques to control PAH emissions from diesel– and petrol-fuelled motor vehicles

1. General aspects of control technologies

12. It is important to ensure that vehicles are designed to meet emission standards while in service. This can be done by ensuring conformity of production, lifetime durability, warranty of emission-control components, and recall of defective vehicles. For vehicles in use, continued emission control performance can be ensured by an effective inspection and maintenance programme.

2. Technical measures for emission control

13. The following measures to control PAH emissions are important:

(a) Fuel-quality specifications and engine modifications to control emissions before they are formed (primary measures); and

(b) Addition of exhaust treatment systems, e.g. oxidizing catalysts or particle traps (secondary measures).

(a) Diesel engines

14. Diesel-fuel modification can yield two benefits: a lower sulphur content reduces emissions of particles and increases the conversion efficiency of oxidizing catalysts, and the reduction in di– and tri-aromatic compounds reduces the formation and emission of PAHs.

15. A primary measure to reduce emissions is to modify the engine to achieve more complete combustion. Many different modifications are in use. In general, vehicle exhaust composition is influenced by changes in combustion chamber design and by higher fuel injection pressures. At present, most diesel engines rely on mechanical engine control systems. Newer engines increasingly use computerized electronic control systems with greater potential flexibility in controlling emissions. Another technology to control emissions is the combined technology of turbocharging and intercooling. This system is successful in reducing NOx as well as increasing fuel economy and power output. For heavy– and light-duty engines the use of intake manifold tuning is also a possibility.

16. Controlling the lubricating oil is important to reduce particulate matter (PM), as 10 to 50% of particulate matter is formed from engine oil. Oil consumption can be reduced by improved engine manufacturing specifications and improved engine seals.

17. Secondary measures to control emissions are additions of exhaust treatment systems. In general, for diesel engines the use of an oxidizing catalyst in combination with a particulate filter has been shown to be effective in reducing PAH emissions. A particle trap oxidizer is being evaluated. It is located in the exhaust system to trap PM and can provide some regeneration of the filter by burning the collected PM, through electrical heating of the system or some other means of regeneration. For proper regeneration of passive system traps during normal operation, a burner-assisted regeneration system or the use of additives is required.

(b) Petrol engines

18. PAH-reduction measures for petrol-fuelled engines are primarily based on the use of a closed-loop three-way catalytic converter, which reduces PAHs as part of the HC emission reductions.

19. Improved cold start behaviour reduces organic emissions in general and PAHs in particular (for instance start-up catalysts, improved fuel evaporation/atomization, heated catalysts).

20. Table 2 summarizes measures for PAH emission control from the exhaust from road transport motor vehicles.

Table 2: PAH emission control for the exhaust from road transport motor vehicles

Management options	Emission level (%)	Management risks
Spark ignition engines:		
– Closed-loop three-way catalytic converter,	10-20	Availability of unleaded petrol.
– Catalysts for reducing cold start emissions.	5-15	Commercially available in some countries.
Fuel for spark ignition engines:		Availability of refinery capacity.
– Reduction of armoatics,		
– Reduction of sulphur.		
Diesel engines:		
– Oxidizing catalyst,	20-70	

Management options	Emission level (%)	Management risks
– Trap oxidizer/particulate filter. Diesel fuel modification: – Reduction of sulphut to reduce particulate emissions. Improvement of diesel engine specifications: – Electronic control system, injection rate adjustment and high-pressure fuel injection, – Turbocharging and intercooling, – Exhaust gas recirculation.		Availability of refinery capacity. Existing technologies.

ANNEX VIII

MAJOR STATIONARY SOURCE CATEGORIES

I. INTRODUCTION

Installations or parts of installations for research, development and the testing of new products are not covered by this list. A more complete description of the categories may be found in annex V.

II. LIST OF CATEGORIES

Category	Description of the category
1	Incineration, including co-incineration, of municipal, hazardous or medical waste, or of sewage sludge.
2	Sinter plants.
3	Primary and secondary production of copper.
4	Production of steel.
5	Smelting plants in the secondary aluminium industry.
6	Combustion of fossil fuels in utility and industrial boilers with a thermal capacity above 50 MW_{th}.
7	Residential combustion.
8	Firing installations for wood with a thermal capacity below 50 MW_{th}.
9	Coke production.
10	Anode production.
11	Aluminium production using the Soederberg process.
12	Wood preservation installations, except for a Party for which this category does not make a significant contribution to its total emissions of PAH (as defined in annex III)

PROTOKOL
O OBSTOJNIH ORGANSKIH ONESNAŽEVALIH H KONVENCIJI IZ LETA 1979 O ONESNAŽEVANJU ZRAKA NA VELIKE RAZDALJE PREKO MEJA

Pogodbenice, ki

so odločene izvajati Konvencijo o onesnaževanju zraka na velike razdalje preko meja,

priznavajo, da se emisije številnih obstojnih organskih onesnaževal prenašajo čez mednarodne meje in se usedajo v Evropi, Severni Ameriki in na Arktiki, daleč stran od kraja nastanka, in da je ozračje glavno sredstvo prenosa,

se zavedajo, da se obstojna organska onesnaževala upirajo razgradnji v naravnih razmerah in da se povezujejo s škodljivimi vplivi na zdravje ljudi in okolje,

so zaskrbljene, ker se lahko vsebnost obstojnih organskih onesnaževal v živih organizmih na višjih trofičnih ravneh zvišuje in doseže koncentracije, ki bi utegnile vplivati na zdravje živali, rastlin in ljudi, ki so jim izpostavljeni,

priznavajo, da so arktični ekosistemi in predvsem avtohtoni prebivalci, ki se preživljajo z arktičnimi ribami in sesalci, še posebej ogroženi zaradi biomagnifikacije obstojnih organskih onesnaževal,

se zavedajo, da bodo ukrepi za nadzor nad emisijami obstojnih organskih onesnaževal pripomogli tudi k varstvu okolja in zdravja ljudi zunaj območij, za katera je pristojna Ekonomska komisija Združenih narodov za Evropo, vključno z arktičnimi in mednarodnimi vodami,

so odločene, da bodo ob upoštevanju previdnostnega pristopa, kot je določeno v 15. načelu Deklaracije o okolju in razvoju iz Ria, sprejele ukrepe za napovedovanje, preprečevanje ali zmanjševanje emisij obstojnih organskih onesnaževal na najmanjšo možno mero,

ponovno potrjujejo, da imajo države v skladu z Ustanovno listino Združenih narodov in načeli mednarodnega prava suvereno pravico do izkoriščanja lastnih virov v skladu s svojimi okoljskimi in razvojnimi politikami ter obveznost zagotoviti, da dejavnosti v okviru njihove državne jurisdikcije ali nadzora ne povzročajo škode okolju drugih držav ali območij zunaj meja državne jurisdikcije,

se zavedajo potrebe po globalnih ukrepih v zvezi z obstojnimi organskimi onesnaževali in se sklicujejo na vlogo regionalnih sporazumov pri zmanjševanju globalnega čezmejnega onesnaževanja zraka, predvideno v 9. poglavju Agende 21, in zlasti Ekonomske komisije Združenih narodov za Evropo pri delitvi njenih regionalnih izkušenj z drugimi regijami sveta,

priznavajo obstoj podregionalne, regionalne in globalne ureditve, vključno z mednarodnimi akti, ki urejajo ravnanje z nevarnimi odpadki, njihovo prehajanje čez meje in odstranjevanje, zlasti Baselsko konvencijo o nadzoru prehoda nevarnih odpadkov preko meja in njihovega odstranjevanja,

menijo, da so prevladujoči viri onesnaževanja zraka, ki pripomorejo h kopičenju obstojnih organskih onesnaževal, uporaba nekaterih pesticidov, izdelava in uporaba nekaterih kemikalij ter nenamerno nastajanje nekaterih snovi pri sežiganju odpadkov, zgorevanju, proizvodnji kovin in premični viri,

se zavedajo, da so na voljo načini in postopki, da bi zmanjšali emisije obstojnih organskih onesnaževal v zrak,

se zavedajo potrebe po stroškovno učinkovitem regionalnem pristopu v boju proti onesnaževanju zraka,

upoštevajo pomemben prispevek zasebnega in nevladnega sektorja k poznavanju učinkov, povezanih z obstojnimi organskimi onesnaževali, razpoložljivih nadomestnih rešitev in načinov zmanjševanja onesnaževanja ter njuno vlogo pri zmanjševanju emisij obstojnih organskih onesnaževal,

upoštevajo, da sprejeti ukrepi za zmanjšanje emisij obstojnih organskih onesnaževal ne bi smeli biti sredstvo za samovoljno ali neupravičeno diskriminacijo ali prikrito omejevanje mednarodne konkurenčnosti in trgovanja,

upoštevajo obstoječe znanstvene in tehnične podatke o emisijah, procesih v ozračju in učinkih obstojnih organskih onesnaževal na zdravje ljudi in okolje kot tudi o stroških njihovega zmanjševanja ter priznavajo potrebo po nadaljevanju znanstvenega in tehničnega sodelovanja, da bi se še izboljšalo razumevanje teh vprašanj,

priznavajo ukrepe glede obstojnih organskih onesnaževal, ki so jih nekatere pogodbenice že sprejele na državni ravni in/ali v skladu z drugimi mednarodnimi konvencijami,

so se sporazumele:

1. člen

POMEN IZRAZOV

V tem protokolu:

1. »konvencija« pomeni Konvencijo o onesnaževanju zraka na velike razdalje preko meja, sprejeto v Ženevi 13. novembra 1979;

2. »EMEP« pomeni program sodelovanja za spremljanje in oceno onesnaževanja zraka na velike razdalje v Evropi;

3. »izvršni organ« pomeni izvršni organ konvencije, ustanovljen v skladu s prvim odstavkom 10. člena konvencije;

4. »komisija« pomeni Ekonomsko komisijo Združenih narodov za Evropo;

5. »pogodbenice« pomenijo pogodbenice tega protokola, razen če sobesedilo ne zahteva drugače;

6. »zemljepisno območje EMEP« pomeni območje, opredeljeno v četrtem odstavku 1. člena Protokola h Konvenciji o onesnaževanju zraka na velike razdalje preko meja iz leta 1979 o dolgoročnem financiranju programa sodelovanja za spremljanje in oceno onesnaževanja zraka na velike razdalje v Evropi (program EMEP), sprejetega v Ženevi 28. septembra 1984;

7. »obstojna organska onesnaževala« pomenijo organske snovi, ki: (i) so strupene; (ii) so obstojne; (iii) se kopičijo v živih organizmih; (iv) prehajajo čez meje na velike razdalje v ozračju in se usedajo; (v) lahko zelo škodljivo učinkujejo na zdravje ljudi ali okolje blizu svojega vira in daleč stran od njega;

8. »snov« pomeni eno samo kemijsko vrsto ali več kemijskih vrst, ki sestavljajo posebno skupino, ker a) imajo podobne lastnosti in se skupaj izpuščajo v okolje, ali (b) sestavljajo mešanico, ki se običajno trži kot en sam izdelek;

9. »emisija« pomeni izpuščanje snovi v ozračje iz točkovnih ali razpršenih virov;

10. »nepremični vir« pomeni vsako stavbo, zgradbo, obrat, napravo ali opremo, ki je nepremična in neposredno ali posredno izpušča ali bi lahko izpuščala obstojna organska onesnaževala v ozračje;

11. »kategorija večjih nepremičnih virov » pomeni vsako kategorijo nepremičnih virov iz priloge VIII;

12. »nov nepremični vir« pomeni vsak nepremični vir, katerega gradnja ali bistvena sprememba se je začela po poteku dveh let od datuma začetka veljavnosti: (i) tega protokola ali (ii) spremembe prilog III ali VIII, če za nepremični vir začnejo veljati določbe tega protokola šele s tako spremembo. O tem, ali je sprememba bistvena, odločijo pristojni državni organi ob upoštevanju dejavnikov, kot so okoljske koristi spremembe.

2. člen

CILJ

Cilj tega protokola je nadzirati, zmanjševati ali odpravljati izpuste, emisije in izgube obstojnih organskih onesnaževal.

3. člen

TEMELJNE OBVEZNOSTI

1. Razen kadar gre za posebno izjemo v skladu s 4. členom, vsaka pogodbenica sprejme učinkovite ukrepe, da bi:

(a) opustila proizvodnjo in uporabo snovi iz priloge I v skladu s tam navedenimi zahtevami glede izvajanja;

(b) (i) zagotovila, da se tedaj, kadar se snovi iz priloge I uničujejo ali odstranjujejo, to uničevanje ali odstranjevanje opravlja na način, sprejemljiv za okolje, ob upoštevanju ustrezne podregionalne, regionalne in globalne ureditve ravnanja z nevarnimi odpadki in njihovega odstranjevanja, predvsem Baselske konvencije o nadzoru prehoda nevarnih odpadkov preko meja in njihovega odstranjevanja;

(ii) skušala zagotoviti, da se odstranjevanje snovi iz priloge I izvaja na domačem ozemlju, pri čemer je treba upoštevati ustrezne okoljske zahteve;

(iii) zagotovila, da se čezmejni prehod snovi iz priloge I opravlja na način, sprejemljiv za okolje, ob upoštevanju ustrezne podregionalne, regionalne in globalne ureditve čezmejnega prehoda nevarnih odpadkov, predvsem Baselske konvencije o nadzoru prehoda nevarnih odpadkov preko meja in njihovega odstranjevanja;

(c) omejila snovi iz priloge II na opisane vrste uporabe v skladu s tam navedenimi zahtevami glede izvajanja.

2. Zahteve iz pododstvaka (b) prvega odstavka začnejo veljati za vsako snov z datumom, s katerim se proizvodnja ali uporaba te snovi opusti, kar se zgodi pozneje.

3. Za snovi iz prilog I, II ali III bi morala vsaka pogodbenica izdelati ustrezne strategije za prepoznavanje izdelkov, ki se še vedno uporabljajo, in odpadkov, ki vsebujejo tovrstne snovi, ter storiti vse potrebno, da zagotovi, da se takšni odpadki in izdelki, potem ko postanejo odpadki, uničijo ali odstranijo na način, sprejemljiv za okolje.

4. Za namene prvega do tretjega odstavka se izrazi odpadek, odstranjevanje in sprejemljiv za okolje razlagajo na način, ki je v skladu z uporabo teh izrazov v Baselski konvenciji o nadzoru prehoda nevarnih odpadkov preko meja in njihovega odstranjevanja.

5. Vsaka pogodbenica:

(a) zmanjša svoje skupne letne emisije vsake snovi iz priloge III glede na raven emisije v referenčnem letu, določenem v skladu s to prilogo, s sprejetjem učinkovitih ukrepov, ki so primerni za njene posebne okoliščine;

(b) najpozneje v časovnem okviru iz priloge VI uveljavi:

(i) najboljše razpoložljive tehnike ob upoštevanju priloge V za vsak nov nepremični vir v okviru kategorije večjih nepremičnih virov, za katere priloga V navaja najboljše razpoložljive tehnike;

(ii) mejne vrednosti, ki so vsaj tako stroge kot tiste iz priloge IV, za vsak nov nepremični vir v kategoriji iz te priloge ob upoštevanju priloge V. Pogodbenica lahko namesto tega uporabi drugačne strategije za zmanjševanje emisij, s katerimi se dosežejo enakovredne skupne ravni emisij;

(iii) najboljše razpoložljive tehnike ob upoštevanju priloge V za vsak obstoječ nepremični vir v okviru kategorije večjih nepremičnih virov, za katere priloga V navaja najboljše razpoložljive tehnike, če je to tehnično in ekonomsko izvedljivo. Pogodbenica lahko namesto tega uporablja drugačne strategije za zmanjševanje emisij, s katerimi se doseže enakovredno skupno zmanjševanje emisij;

(iv) mejne vrednosti, ki so vsaj tako stroge kot tiste iz priloge IV, za vsak obstoječ nepremični vir v kategoriji iz te priloge, če je to tehnično in ekonomsko izvedljivo, ob upoštevanju priloge V. Pogodbenica lahko namesto tega uporablja drugačne strategije za zmanjševanje emisij, s katerimi se doseže enakovredno skupno zmanjševanje emisij;

(v) učinkovite ukrepe za nadzor nad emisijami iz premičnih virov ob upoštevanju priloge VII.

6. Pri malih kuriščih se obveznosti, določene v točkah (i) in (ii) pododstavka (b) petega odstavka, nanašajo na vse nepremične vire skupaj v tej kategoriji.

7. Če pogodbenica po upoštevanju pododstavka (b) petega odstavka ne more izpolnjevati zahtev iz pododstavka (a) petega odstavka glede snovi iz priloge III, je oproščena obveznosti iz pododstavka (a) petega odstavka glede te snovi.

8. Vsaka pogodbenica pripravlja in dopolnjuje evidence emisij za snovi iz priloge III ter zbira razpoložljive podatke o proizvodnji in prodaji snovi iz prilog I in II; pogodbenice na zemljepisnem območju programa EMEP uporabljajo vsaj metodologije ter prostorsko in časovno ločljivost, ki jih je določil upravni organ programa EMEP, pogodbenice zunaj zemljepisnega območja programa EMEP pa uporabljajo kot smernice metodologije, razvite z delovnim načrtom izvršnega organa. O teh podatkih poroča v skladu z zahtevami glede poročanja iz 9. člena.

4. člen

IZJEME

1. Prvi odstavek 3. člena ne velja za količine snovi, uporabljene za laboratorijske raziskave ali kot referenčni standard.

2. Pogodbenica lahko za določene snovi odobri izjemo od pododstavkov (a) in (c) prvega odstavka 3. člena pod pogojem, da se ta izjema ne odobri ali se ne uporablja na način, ki bi bil v nasprotju s cilji tega protokola, ter samo za te namene in pod naslednjimi pogoji:

(a) za raziskave, ki niso omenjene v prvem odstavku tega člena, s tem da:

(i) se pričakuje, da med predlagano uporabo in poznejšim odstranjevanjem nobena večja količina snovi ne bi prišla v okolje;

(ii) pogodbenica oceni in odobri cilje in parametre takšne raziskave in

(iii) ob večjem izpustu snovi v okolje izjema nemudoma preneha veljati, da se sprejmejo ustrezni ukrepi za zmanjšanje učinkov izpusta in da se pred nadaljevanjem raziskave oceni učinkovitost takih ukrepov;

(b) za obvladovanje izrednih razmer v zvezi z zdravjem ljudi:

(i) če pogodbenica nima na voljo ustreznih drugih ukrepov za ureditev razmer;

(ii) če so sprejeti ukrepi sorazmerni z obsegom in težo izrednih razmer;

(iii) s tem da se sprejmejo ustrezni ukrepi za varovanje zdravja ljudi in okolja ter da se zagotovi, da snov ne bo uporabljena zunaj zemljepisnega območja, na katerem so izredne razmere;

(iv) s tem da se izjema odobri za obdobje, ki ne presega trajanja izrednih razmer, in

(v) s tem da po prenehanju izrednih razmer za vse preostale količine snovi veljajo določbe pododstavka (b) prvega odstavka 3. člena;

(c) za uporabo v manjšem obsegu, ki jo pogodbenica šteje za nujno:

(i) s tem da se izjema odobri za največ pet let;

(ii) če pred tem ni odobrila izjeme po tem členu;

(iii) če za predlagano uporabo ni ustreznih nadomestnih rešitev;

(iv) če je pogodbenica ocenila emisije snovi, ki bi nastale kot posledica izjeme, in njihov prispevek k skupnim emisijam snovi pogodbenic;

(v) s tem da se sprejmejo ustrezni previdnostni ukrepi, s katerimi se zagotovi, da bodo emisije v okolje čim manjše, in

(vi) s tem da po prenehanju veljavnosti izjeme za vse preostale količine snovi veljajo določbe pododstavka (b) prvega odstavka 3. člena.

3. Vsaka pogodbenica najpozneje v devetdesetih dneh po tem, ko je bila izjema odobrena v skladu z drugim odstavkom tega člena, pošlje sekretariatu najmanj naslednje podatke:

(a) kemijsko ime snovi, za katero velja izjema;

(b) namen, za katerega je bila izjema odobrena;

(c) pogoje, pod katerimi je bila izjema odobrena;

(d) za koliko časa je bila izjema odobrena;

(e) za katere osebe ali organizacije izjema velja in

(f) za izjemo, odobreno v skladu s pododstavkoma (a) in (c) drugega odstavka tega člena, ocenjene emisije snovi, ki so posledica izjeme, in oceno njihovega prispevka k skupnim emisijam snovi pogodbenic.

4. Sekretariat da vsem pogodbenicam na voljo podatke, ki jih je prejel, v skladu s tretjim odstavkom tega člena.

5. člen

IZMENJAVA INFORMACIJ IN TEHNOLOGIJE

Pogodbenice v skladu s svojimi zakoni, predpisi in prakso zagotovijo ustrezne možnosti za lažjo izmenjavo informacij in tehnologije, namenjene zmanjševanju nastajanja obstojnih organskih onesnaževal in njihovih emisij, ter za pripravo stroškovno učinkovitih nadomestnih rešitev med drugim s spodbujanjem:

(a) stikov in sodelovanja med ustreznimi organizacijami in posamezniki v zasebnem in javnem sektorju, ki lahko zagotovijo tehnologijo, projektiranje in inženiring, opremo ali finančna sredstva;

(b) izmenjave in dostopa do informacij o pripravi in uporabi nadomestnih rešitev za obstojna organska onesnaževala ter o oceni tveganj, ki jih takšne nadomestne rešitve pomenijo za zdravje ljudi in okolje, ter izmenjave in dostopa do informacij o ekonomskih in družbenih stroških takšnih nadomestnih rešitev;

(c) oblikovanja in rednega posodabljanja seznamov njihovih pristojnih organov, ki se ukvarjajo s podobnimi dejavnostmi v drugih mednarodnih forumih;

(d) izmenjave informacij o dejavnostih, ki potekajo v drugih mednarodnih forumih.

6. člen

OZAVEŠČANJE JAVNOSTI

Pogodbenice v skladu s svojimi zakoni, predpisi in prakso spodbujajo obveščanje široke javnosti, vključno s posamezniki, ki neposredno uporabljajo obstojna organska onesnaževala. Informacije lahko med drugim vključujejo:

(a) informacije o oceni tveganja in nevarnosti, vključno z označevanjem;

(b) informacije o zmanjševanju tveganja;

(c) informacije, s katerimi se spodbuja odstranjevanje obstojnih organskih onesnaževal ali zmanjševanje njihove uporabe, vključno z informacijami – kadar je to primerno – o celovitem zatiranju škodljivcev, celovitem ravnanju s poljščinami ter o ekonomskih in družbenih učinkih takšnega odstranjevanja ali zmanjšanja, ter

(d) informacije o nadomestnih rešitvah za obstojna organska onesnaževala in oceni tveganj, ki jih takšne nadomestne rešitve pomenijo za zdravje ljudi in okolje, ter informacije o ekonomskih in družbenih učinkih takšnih nadomestnih rešitev.

7. člen

STRATEGIJE, POLITIKE, PROGRAMI, UKREPI IN INFORMACIJE

1. Vsaka pogodbenica najpozneje v šestih mesecih od dneva začetka veljavnosti tega protokola pripravi strategije, politike in programe za izpolnitev svojih obveznosti po tem protokolu.

2. Vsaka pogodbenica:

(a) spodbuja uporabo ekonomsko izvedljivih, za okolje sprejemljivih načinov ravnanja, vključno z najboljšimi okoljskimi praksami, glede vseh vidikov uporabe, proizvodnje, izpuščanja, predelave, distribucije snovi, na katere se nanaša ta protokol, ter industrijskih izdelkov, mešanic ali raztopin, ki vsebujejo takšne snovi, ravnanja z njimi, njihovega prevoza in ponovne predelave;

(b) spodbuja izvajanje drugih programov ravnanja za zmanjševanje emisij obstojnih organskih onesnaževal, vključno s prostovoljnimi programi in uporabo ekonomskih instrumentov;

(c) prouči možnosti sprejetja ustreznih dodatnih politik in ukrepov glede na svoje razmere, kar lahko vključuje načine, ki niso posebej urejeni s predpisi;

(d) si odločno prizadeva, če je to ekonomsko izvedljivo, zmanjšati ravni snovi, na katere se nanaša ta protokol, in jih kot onesnaževala vsebujejo druge snovi, kemični ali industrijski izdelki, takoj ko je ugotovljena pomembnost vira;

(e) v svojih programih za ocenjevanje snovi upošteva lastnosti, navedene v prvem odstavku odločbe izvršnega organa št. 1998/2 o informacijah, ki jih je treba predložiti, ter o postopkih za uvrščanje snovi v priloge I, II ali III, vključno z vsemi spremembami.

3. Pogodbenice lahko sprejmejo strožje ukrepe od tistih, ki jih zahteva ta protokol.

8. člen

RAZISKAVE, RAZVOJ IN SPREMLJANJE STANJA

Pogodbenice spodbujajo raziskave, razvoj, spremljanje stanja in sodelovanje, kar se med drugim nanaša na:

(a) emisije, prenos na velike razdalje in stopnje usedanja in njihove modele, obstoječe količine v živem in neživem okolju, oblikovanje postopkov za usklajevanje ustreznih metodologij;

(b) poti onesnaževal in evidence v reprezentativnih ekosistemih;

(c) vplive na zdravje ljudi in okolje, vključno z ugotavljanjem njihovega obsega;

(d) najboljše razpoložljive tehnike in postopke, vključno s postopki v kmetijstvu, ter tehnike in postopke za nadzor nad emisijami, ki jih pogodbenice trenutno uporabljajo ali razvijajo;

(e) metodologije, ki omogočajo upoštevanje družbeno-ekonomskih dejavnikov pri vrednotenju nadomestnih strategij nadzora;

(f) pristop na podlagi učinkov, ki vključuje ustrezne informacije, tudi informacije, pridobljene v skladu s pododstavki od (a) do (e) tega člena, o izmerjenih ali modeliranih okoljskih ravneh, poteh in vplivih na zdravje ljudi in okolje, z namenom oblikovati prihodnje strategije nadzora, ki bi upoštevale tudi gospodarske in tehnološke dejavnike;

(g) metode za ocenjevanje nacionalnih emisij in predvidevanje prihodnjih emisij posameznih obstojnih organskih onesnaževal ter za ugotavljanje, kako se takšne ocene in predvidevanja lahko uporabijo za strukturiranje prihodnjih obveznosti;

(h) ravni snovi, na katere se nanaša ta protokol in ki jih kot onesnaževala vsebujejo druge snovi, kemični ali industrijski izdelki, ter višine teh ravni pri prenosu na velike razdalje kot tudi postopke za zmanjševanje ravni teh onesnaževal ter poleg tega ravni obstojnih organskih onesnaževal, ki nastajajo v življenjskem ciklusu lesa, zaščitenega s pentaklorofenolom.

Prednost bi morale imeti raziskave snovi, za katere se najverjetneje zdi, da se nanje nanašajo postopki, določeni v šestem odstavku 14. člena.

9. člen

POROČANJE

1. V skladu s svojo zakonodajo, ki ureja zaupnost poslovnih informacij:

(a) vsaka pogodbenica prek izvršnega sekretarja komisije v rednih časovnih presledkih, ki jih določijo pogodbenice na zasedanju izvršnega organa, poroča o sprejetih ukrepih za izvajanje tega protokola;

(b) vsaka pogodbenica na zemljepisnem območju programa EMEP prek izvršnega sekretarja komisije v rednih časovnih presledkih, ki jih določi upravni organ programa EMEP in potrdijo pogodbenice na zasedanju izvršnega organa, poroča EMEP-u o ravneh emisij obstojnih organskih onesnaževal, pri čemer uporablja najmanj metodologije ter časovno in prostorsko specifikacijo, kot to določi upravni organ programa EMEP. Pogodbenice zunaj zemljepisnega območja programa EMEP zagotovijo izvršnemu organu na njegovo zahtevo podobne informacije. Vsaka pogodbenica prav tako zagotovi informacije o ravneh emisij snovi, navedenih v prilogi III, za referenčno leto iz te priloge.

2. Informacije, ki se pošiljajo v skladu s pododstavkom (a) prvega odstavka tega člena, morajo biti v skladu s sklepom, ki ureja obliko in vsebino ter ga pogodbenice sprejmejo na zasedanju izvršnega organa. Določila tega sklepa se po potrebi pregledajo, da se ugotovijo morebitni dodatni elementi v zvezi z obliko ali vsebino informacij, ki se vključujejo v poročila.

3. EMEP pošlje podatke o prenosu obstojnih organskih onesnaževal na velike razdalje in njihovem usedanju dovolj zgodaj pred vsakim letnim zasedanjem izvršnega organa.

10. člen

PREGLEDI, KI JIH OPRAVIJO POGODBENICE NA ZASEDANJIH IZVRŠNEGA ORGANA

1. Pogodbenice na zasedanjih izvršnega organa v skladu s pododstavkom (a) drugega odstavka 10. člena konvencije pregledajo informacije, ki jih predložijo pogodbenice, program EMEP in druga pomožna telesa, ter poročila izvedbenega odbora iz 11. člena tega protokola.

2. Pogodbenice na zasedanjih izvršnega organa spremljajo napredek, dosežen pri izpolnjevanju obveznosti, določenih v tem protokolu.

3. Pogodbenice na zasedanjih izvršnega organa pregledajo, ali so obveznosti, določene v tem protokolu, zadostne in učinkovite. Pri takih pregledih upoštevajo najboljše dostopne znanstvene podatke o vplivih usedanja obstojnih organskih onesnaževal, ocene tehnološkega razvoja, spremembe gospodarskih razmer in izpolnjevanje obveznosti glede ravni emisij. Postopke, metode in časovni razpored takih pregledov pogodbenice določijo na zasedanju izvršnega organa. Prvi tak pregled se opravi najpozneje v treh letih po začetku veljavnosti tega protokola.

11. člen

IZPOLNJEVANJE OBVEZNOSTI

Izpolnjevanje obveznosti vsake pogodbenice po tem protokolom se redno pregleduje. Te preglede opravlja izvedbeni odbor, ki ga je ustanovil izvršni organ na svojem petnajstem zasedanju s sklepom 1997/2, in poroča pogodbenicam na zasedanju izvršnega organa v skladu z določili priloge k temu sklepu, vključno z vsemi njegovimi spremembami.

12. člen

REŠEVANJE SPOROV

1. Pri sporu med dvema ali več pogodbenicami v zvezi z razlago ali uporabo tega protokola si pogodbenice prizadevajo rešiti spor s pogajanji ali na kateri koli drug miren način po svoji izbiri. Stranke v sporu o njem obvestijo izvršni organ.

2. Ob ratifikaciji, sprejetju, odobritvi tega protokola ali pristopu k njemu ali kadar koli po tem lahko pogodbenica, ki ni organizacija za regionalno gospodarsko povezovanje, v pisnem dokumentu, ki ga predloži depozitarju, izjavi, da ob vsakem sporu v zvezi z razlago ali uporabo protokola s katero koli pogodbenico, ki sprejme enako obveznost, priznava enega ali oba od naslednjih načinov reševanja sporov kot dejansko obvezna in brez posebnega sporazuma:

(a) predložitev spora Meddržavnemu sodišču;

(b) arbitražo v skladu s postopki, ki jih pogodbenice, takoj ko je to mogoče, sprejmejo v obliki priloge o arbitraži na zasedanju izvršnega organa.

Pogodbenica, ki je organizacija za regionalna gospodarsko povezovanje, lahko da izjavo z enakim učinkom v zvezi z arbitražo v skladu s postopki iz pododstavka (b) tega odstavka.

3. Izjava, dana po drugem odstavku tega člena, velja, dokler ne preneha veljati v skladu s svojimi določili ali dokler ne minejo trije meseci od deponiranja pisnega obvestila o njenem preklicu pri depozitarju.

4. Nova izjava, obvestilo o preklicu ali prenehanje veljavnosti izjave v nobenem primeru ne vpliva na že začete postopke pred Meddržavnim sodiščem ali arbitražnim sodiščem, razen če se stranke v sporu ne dogovorijo drugače.

5. Če dvanajst mesecev po tem, ko je ena pogodbenica uradno obvestila drugo, da sta v sporu, vpletenima pogodbenicama ni uspelo rešiti spora na katerega od načinov iz prvega odstavka tega člena, se spor na zahtevo katere koli vpletene stranke rešuje s spravo, kar pa ne velja, če sta stranki v sporu sprejeli enak način reševanja sporov skladno z drugim odstavkom tega člena.

6. Za namen petega odstavka tega člena se ustanovi spravna komisija. Vsaka vpletena pogodbenica ali skupina pogodbenic, če imajo v postopku sprave enak interes, imenuje v komisijo enako število članov, tako imenovani člani pa skupaj izberejo predsedujočega Komisija sprejme priporočilo, ki ga pogodbenice upoštevajo v dobri veri.

13. člen

PRILOGE

Priloge tega protokola so njegov sestavni del. Prilogi V in VII imata naravo priporočila.

14. člen

SPREMEMBE

1. Vsaka pogodbenica lahko predlaga spremembe tega protokola.

2. Predlagane spremembe se v pisni obliki predložijo izvršnemu sekretarju komisije, ki jih sporoči vsem pogodbenicam. Pogodbenice razpravljajo o predlaganih spremembah na naslednjem zasedanju izvršnega organa pod pogojem, da izvršni sekretar pošlje predloge pogodbenicam najmanj devetdeset dni pred zasedanjem.

3. Spremembe tega protokola in njegovih prilog od I do IV, VI in VIII se sprejmejo s konsenzom pogodbenic, prisotnih na zasedanju izvršnega organa, za pogodbenice, ki so jih sprejele, pa začnejo veljati devetdeseti dan po datumu, ko dve tretjini pogodbenic deponirata listine o sprejetju pri depozitarju. Za vsako drugo pogodbenico začnejo spremembe veljati devetdeseti dan po datumu, ko ta pogodbenica deponira listino o sprejetju.

4. Spremembe prilog V in VII se sprejmejo s konsenzom pogodbenic, prisotnih na zasedanju izvršnega organa. Po preteku devetdesetih dni po datumu, ko izvršni sekretar komisije o spremembi obvesti vse pogodbenice, začne spre-

memba katere koli od teh prilog veljati za pogodbenice, ki depozitarju ne pošljejo uradnega obvestila v skladu z določbami petega odstavka tega člena, če najmanj šestnajst pogodbenic ni poslalo takega uradnega obvestila.

5. Vsaka pogodbenica, ki ne more odobriti spremembe priloge V ali VII, o tem pisno uradno obvesti depozitarja v devetdesetih dneh po datumu obvestila o sprejetju spremembe. Depozitar o vsakem takem prejetem uradnem obvestilu nemudoma uradno obvesti vse pogodbenice. Pogodbenica lahko kadar koli nadomesti svoje prejšnje uradno obvestilo s sprejetjem spremembe, sprememba te priloge pa za to pogodbenico začne veljati po deponiranju listine o sprejetju pri depozitarju.

6. Če se predlaga, da se priloge I, II ali III spremenijo tako, da se v ta protokol vključi neka snov:

(a) predlagatelj izvršnemu organu pošlje podatke, navedene v sklepu izvršnega organa št. 1998/2, vključno z vsemi njegovimi spremembami, in

(b) pogodbenice ocenijo predlog v skladu s postopki, določenimi v sklepu izvršnega organa št. 1998/2, vključno z vsemi njegovimi spremembami.

7. Vsak sklep o spremembi sklepa izvršnega organa št. 1998/2 se sprejme s konsenzom pogodbenic na zasedanju v izvršnega organa in začne veljati šestdeseti dan po datumu sprejetja.

15. člen

PODPIS

1. Ta protokol je na voljo za podpis v Aarhusu (Danska) od 24. do 25. junija 1998, nato pa na sedežu Združenih narodov v New Yorku do 21. decembra 1998 državam članicam komisije in državam, ki imajo pri komisiji posvetovalni status v skladu z osmim odstavkom resolucije št. 36 (IV) Ekonomsko-socialnega sveta z dne 28. marca 1947, ter organizacijam za regionalno gospodarsko povezovanje, ki so jih ustanovile suverene države članice komisije in so pristojne za pogajanja, sklepanje in izvajanje mednarodnih sporazumov o zadevah iz protokola, če so te države in organizacije pogodbenice konvencije.

2. Take organizacije za regionalno gospodarsko povezovanje pri zadevah v svoji pristojnosti v svojem imenu uresničujejo pravice in izpolnjujejo obveznosti, ki jih ta protokol nalaga njihovim državam članicam. V takih primerih države članice teh organizacij ne smejo uresničevati teh pravic posamično.

16. člen

RATIFIKACIJA, SPREJETJE, ODOBRITEV IN PRISTOP

1. Podpisnice ratificirajo, sprejmejo ali odobrijo ta protokol.

2. Od 21. decembra 1998 lahko države in organizacije, ki izpolnjujejo zahteve iz prvega odstavka 15. člena, pristopijo k temu protokolu.

17. člen

DEPOZITAR

Listine o ratifikaciji, sprejetju, odobritvi ali pristopu se deponirajo pri generalnem sekretarju Združenih narodov, ki bo opravljal nalogo depozitarja.

18. člen

ZAČETEK VELJAVNOSTI

1. Ta protokol začne veljati devetdeseti dan po datumu deponiranja šestnajste listine o ratifikaciji, sprejetju, odobritvi ali pristopu pri depozitarju.

2. Za vsako državo in organizacijo iz prvega odstavka 15. člena, ki ratificira, sprejme ali odobri ta protokol ali pristopi k njemu po deponiranju šestnajste listine o ratifikaciji, sprejetju, odobritvi ali pristopu, začne protokol veljati devetdeseti dan po datumu, ko ta pogodbenica deponira svojo listino o ratifikaciji, sprejetju, odobritvi ali pristopu.

19. člen

ODPOVED

Kadar koli po petih letih po datumu začetka veljavnosti tega protokola za posamezno pogodbenico ga lahko ta odpove s pisnim uradnim obvestilom depozitarju. Odpoved začne veljati devetdeseti dan po datumu, ko depozitar prejme uradno obvestilo o odpovedi, ali pozneje, če je tako določeno v uradnem obvestilu o odpovedi.

20. člen

VERODOSTOJNA BESEDILA

Izvirnik tega protokola, katerega besedila v angleškem, francoskem in ruskem jeziku so enako verodostojna, se deponira pri generalnem sekretarju Združenih narodov.

V POTRDITEV TEGA so podpisani, ki so bili za to pravilno pooblaščeni, podpisali ta protokol.

Sestavljeno v Aarhusu (Danska) 24. junija tisoč devetsto osemindevetdeset.

PRILOGA I

SNOVI, KI JIH JE TREBA OPUSTITI

Če ni določeno drugače v tem protokolu, se ta priloga ne nanaša na spodaj naštete snovi: (i) kadar se pojavijo kot onesnaževala v izdelkih ali (ii) kadar se pojavijo v izdelkih, izdelanih ali uporabljenih do datuma uveljavitve, ali (iii) kadar se uporabljajo lokalno kot vmesni kemični produkti pri proizvodnji ene ali več različnih snovi in se torej kemijsko pretvorijo. Če ni drugače določeno, začne vsaka od spodaj navedenih obveznosti veljati z datumom začetka veljavnosti protokola.

Snov	Zahteve glede izvajanja	
	Opustitev	Pogoji
aldrin CAS št.: 309-00-2	proizvodnje	Jih ni.
	uporabe	Jih ni.
klordan CAS št.: 57-74-9	proizvodnje	Jih ni.
	uporabe	Jih ni.
klordekon CAS št.: 143-50-0	proizvodnje	Jih ni.
	uporabe	Jih ni.
DDT CAS št.: 50-29-3	proizvodnje	1. Opustiti proizvodnjo v enem letu, potem ko pogodbenice dosežejo soglasje, da so na voljo ustrezne nadomestne snovi za DDT za varovanje zdravja ljudi pred boleznimi, kot sta malarija in encefalitis. 2. Pogodbenice najpozneje v enem letu po datumu začetka veljavnosti tega protokola, potem pa občasno po potrebi ter po posvetu s Svetovno zdravstveno organizacijo, Organizacijo ZN za prehrano in kmetijstvo ter Programom ZN za okolje ocenijo razpoložljivost in možnost uporabe nadomestnih snovi, in če je to primerno, spodbujajo komercializacijo varnejših in ekonomsko sprejemljivih nadomestnih snovi za DDT, da se proizvodnjo DDT čim prej opusti.
	uporabe	Jih ni, razen tistih, navedenih v prilogi II.
dieldrin CAS št.: 60-57-1	proizvodnje	Jih ni.
	uporabe	Jih ni.
endrin CAS št.: 72-20-8	proizvodnje	Jih ni.
	uporabe	Jih ni.
heptaklor CAS št.: 76-44-8	proizvodnje	Jih ni.
	uporabe	Jih ni, razen če ga uporablja pooblaščeno osebje za boj proti ognjenim mravljam v zaprtih industrijskih električnih priključnih dozah. Takšno uporabo je treba ponovno oceniti v skladu s tem protokolom najpozneje dve leti po datumu začetka veljavnosti.
heksabromobifenil CAS št.: 36355-01-8	proizvodnje	Jih ni.
	uporabe	Jih ni.
heksaklorobenzen CAS št.: 118-74-1	proizvodnje	Jih ni, razen za proizvodnjo za omejene namene, kot je določeno v izjavi, ki jo je deponirala država z gospodarstvom na prehodu po podpisu ali pristopu.
	uporabe	Jih ni, razen za omejeno uporabo, kot je določeno v izjavi, ki jo je deponirala država z gospodarstvom na prehodu po podpisu ali pristopu.
mirex CAS št.: 2385-85-5	proizvodnje	Jih ni.
	uporabe	Jih ni.
PCB [a/]	proizvodnje	Jih ni, razen za države z gospodarstvom na prehodu, ki morajo opustiti proizvodnjo, takoj ko je mogoče, najpozneje pa do 31. decembra 2005, in v izjavi, ki jo deponirajo skupaj s svojo listino o ratifikaciji, sprejetju, odobritvi ali pristopu, navedejo, da bodo to storile.
	uporabe	Jih ni, razen tistih, določenih v prilogi II.
toksafen CAS št.: 8001-35-2	proizvodnje	Jih ni.
	uporabe	Jih ni.

[a/]Pogodbenice se strinjajo, da v skladu s tem protokolom do 31. decembra 2004 ponovno ocenijo proizvodnjo in uporabo polikloriranih terfenilov in »ugileca«.

PRILOGA II

SNOVI, KATERIH UPORABO JE TREBA OMEJITI

Če ni določeno drugače v tem protokolu, se ta priloga ne nanaša na spodaj naštete snovi: (i) kadar se pojavijo kot onesnaževala v izdelkih ali (ii) kadar se pojavijo v izdelkih, izdelanih ali uporabljenih do datuma uveljavitve, ali (iii) kadar se uporabljajo lokalno kot vmesni kemični produkt pri proizvodnji ene ali več različnih snovi in se torej kemijsko pretvorijo. Če ni drugače določeno, začne vsaka od spodaj navedenih obveznosti veljati z datumom začetka veljavnosti protokola.

Snov	Zahteve glede izvajanja	
	Omejena uporaba	Pogoji
DDT CAS št.: 50-29-3	1. Za varovanje zdravja ljudi pred boleznimi, kot sta malarija in encefalitis. 2. Kot vmesni kemični produkt za proizvodnjo dikofola.	1. Uporaba dovoljena le kot sestavni del strategije za celovito varstvo pred škodljivci in samo v takšnem obsegu, kot je potreben, ter samo do enega leta po datumu opustitve proizvodnje v skladu s prilogo I. 2. Takšno uporabo je treba ponovno oceniti najpozneje dve leti po datumu začetka veljavnosti tega protokola.
HCH CAS št.: 608-73-1	Tehnični HCH (HCH iz mešanice izomerov) je omejen na uporabo kot vmesni produkt v kemični industriji.	
	Uporaba izdelkov, v katerih je najmanj 99% izomera HCH v obliki gama (tj. lindana, CAS št.: 58-89-9), je omejena na: 1. obdelavo semen; 2. uporabo na tleh, ki ji sledi takojšnje pronicanje v površinski sloj tal; 3. strokovno zaščito in industrijsko obdelavo žaganega in stavbnega lesa ter hlodovine; 4. topični insekticid za zdravje ljudi in uporabo v veterini; 5. talno uporabo pri sadikah dreves, omejeno uporabo za trate ter uporabo v drevesnicah in za okrasne rastline tako v zaprtih prostorih kot na prostem; 6. uporabo v zaprtih prostorih v industriji in stanovanjih;	Vse vrste omejene uporabe lindana se v skladu s tem protokolom ponovno ocenijo najpozneje dve leti po njegovi uveljavitvi.
PCB [a/]	PCB-ji, ki se uporabljajo od datuma začetka veljavnosti protokola ali so izdelani do 31. decembra 2005 v skladu s prilogo I.	Pogodbenice si odločno prizadevajo: (a) opustiti uporabo prepoznavnih PCB-jev v opremi (tj. transformatorjih, kondenzatorjih ali drugih posodah, ki vsebujejo ostanke tekočine), ki vsebuje več kot 5 dm^3 PCB-jev in katerih koncentracija je 0,05% PCB-jev ali več, takoj ko je to mogoče, najpozneje pa do 31. decembra 2010 ali 31. decembra 2015 za države z gospodarstvom na prehodu; (b) uničevati ali dekontaminirati vse tekoče PCB-je, navedeni v pododstavku (a), in druge tekočine s PCB-ji, ki niso v opremi in vsebujejo več kot 0,005% PCB-jev, na način, sprejemljiv za okolje, takoj ko je to mogoče, najpozneje pa do 31. decembra 2015 ali 31. decembra 2020 za države z gospodarstvom na prehodu, ter (c) dekontaminirati ali odstraniti opremo, navedeno v pododstavku (a), na način, sprejemljiv za okolje.

[a/] Pogodbenice se strinjajo, da v skladu s tem protokolom do 31. decembra 2004 ponovno ocenijo proizvodnjo in uporabo polikloriranih terfenilov in »ugileca«.

PRILOGA III

SNOVI, NAVEDENE V PODODSTAVKU (a) PETEGA ODSTAVKA 3. ČLENA, IN REFERENČNO LETO ZA IZPOLNITEV OBVEZNOSTI

Snov	Referenčno leto
PAH [a/]	1990 ali katero koli drugo leto od vključno 1985 do 1995, ki ga določi pogodbenica ob ratifikaciji, sprejetju, odobritvi ali pristopu.
dioksini/furani [b]	1990 ali katero koli drugo leto od vključno 1985 do 1995, ki ga določi pogodbenica ob ratifikaciji, sprejetju, odobritvi ali pristopu.
heksaklorobenzen	1990 ali katero koli drugo leto od vključno 1985 do 1995, ki ga določi pogodbenica ob ratifikaciji, sprejetju, odobritvi ali pristopu.

[a/] Policiklični aromatični ogljikovodiki (PAH): Za evidence emisij se uporabijo naslednje štiri indikatorske spojine: benzo-(a)piren, benzo(b)fluranten, benzo(k)fluoranten in indeno(1, 2, 3-cd) piren.

[b/] Dioksini in furani (PCDD/F): Poliklorirani dibenzo-p-dioksini (PCDD) in poliklorirani dibenzofurani (PCDF) so triciklične, aromatske spojine, ki nastanejo z dvema benzenskima obročema, ki sta povezana z dvema atomoma kisika v PCDD in z enim atomom kisika v PCDF in katerih atome vodika lahko nadomesti do 8 atomov klora.

PRILOGA IV

MEJNE VREDNOSTI ZA PCDD/F IZ VEČJIH NEPREMIČNIH VIROV

I. UVOD

1. Dioksini in furani (PCDD/F) so opredeljeni v prilogi III tega protokola.

2. Mejne vrednosti so izražene kot ng/m^3 ali mg/m^3 v standardnih pogojih (273,15 K; 101,3 kPa in suhi plin).

3. Mejne vrednosti se nanašajo na normalno delovanje, vključno s postopki za zagon in ustavitev, razen če niso bile določene posebne mejne vrednosti za to delovanje.

4. Vzorčenje in analiza vseh onesnaževal se opravi v skladu s standardi, ki jih je določil Evropski odbor za standardizacijo (CEN), Mednarodna organizacija za standardizacijo (ISO), ali z ustreznimi referenčnimi metodami Združenih držav ali Kanade. Med pripravo standardov CEN ali ISO veljajo nacionalni standardi.

5. Za preverjanje je treba pri razlagi rezultatov meritev v zvezi z mejno vrednostjo upoštevati tudi netočnost merilne metode. Šteje se, da je mejna vrednost dosežena, če rezultat meritve, od katerega je odšteta netočnost merilne metode, ne presega te vrednosti.

6. Emisije različnih sorodnih vrst PCDD/F so izražene v ekvivalentih toksičnosti (TE) v primerjavi z 2,3,7,8-TCDD v skladu s sistemom, ki ga je predlagal Odbor Nata o izzivih sodobne družbe (NATO-CCMS) leta 1988.

II. MEJNE VREDNOSTI ZA VEČJE NEPREMIČNE VIRE

7. Spodaj navedene mejne vrednosti, ki se nanašajo na 11-odstotno koncentracijo O_2 v dimnem plinu, veljajo za naslednje vrste sežigalnic:

za komunalne trdne odpadke (sežig več kot 3 tone na uro)
0,1 ng TE/m^3
za medicinske trdne odpadke (sežig več kot 1 tona na uro)
0,5 ng TE/m^3
za nevarne odpadke (sežig več kot 1 tona na uro)
0,2 ng TE/m^3.

PRILOGA V

NAJBOLJŠE RAZPOLOŽLJIVE TEHNIKE ZA NADZOR NAD EMISIJAMI OBSTOJNIH ORGANSKIH ONESNAŽEVAL IZ VEČJIH NEPREMIČNIH VIROV

I. UVOD

1. Namen te priloge je zagotoviti pogodbenicam konvencije smernice za prepoznavanje najboljših razpoložljivih tehnik, ki so na voljo, za izpolnjevanje obveznosti iz petega odstavka 3. člena protokola.

2. »Najboljše razpoložljive tehnike« (*best available techniques* – »BAT«) pomenijo najučinkovitejšo in najsodobnejšo stopnjo v razvoju dejavnosti in njihovih delovnih postopkov, ki označujejo praktično primernost posameznih tehnik, da se načelno zagotovi podlaga za mejne vrednosti emisij, namenjena preprečevanju, in če to ni mogoče, splošnemu zmanjševanju emisij in njihovega vpliva na okolje kot celoto:

– »tehnike« vključujejo uporabljeno tehnologijo in način projektiranja gradnje, vzdrževanja, upravljanja in razgradnje objektov in naprav;

– »razpoložljive tehnike« pomenijo tiste, katerih stopnja razvoja omogoča izvajanje v ustrezni industrijski panogi v ekonomsko in tehnično izvedljivih razmerah ob upoštevanju stroškov in koristi ne glede na to, ali se tehnike uporabljajo ali nastanejo na območju udeležene pogodbenice, če so na primeren način dostopne upravljavcu;

˜ – »najboljše« pomenijo najučinkovitejše tehnike pri doseganju visoke splošne ravni varovanja okolja kot celote.

Pri določanju najboljših razpoložljivih tehnik je treba na splošno ali v posameznih primerih posebej upoštevati spodaj navedene dejavnike, verjetne stroške in koristi ukrepa ter načeli previdnosti in preprečevanja:

– uporabo tehnologij z malo odpadki;

– uporabo manj nevarnih snovi;

– spodbujanje predelave in recikliranja snovi, ki nastajajo ali se uporabljajo pri proizvodnji, ter odpadkov;

– primerljive postopke, naprave ali delovne postopke, ki so že uspešno preizkušeni v industrijskem obsegu;

– tehnološki napredek in spremembe v znanstvenem vedenju in razumevanju;

– naravo, učinke in količino nastalih emisij;

– datume začetka obratovanja novih ali obstoječih naprav;

– čas, potreben za uvedbo najboljše razpoložljive tehnike;

– porabo in naravo surovin (vključno z vodo), ki se uporabljajo v postopku, in njihovo energetsko učinkovitost;

– nujnost, da se preprečita ali čim bolj zmanjšata skupen vpliv emisij in tveganje za okolje;

– nujnost, da se preprečijo nesreče in čim bolj zmanjšajo njihove posledice za okolje.

Namen uporabe pojma najboljše razpoložljive tehnike ni predpisovanje določene tehnike ali tehnologije, ampak upoštevanje tehničnih lastnosti posameznih naprav in objektov, njihove geografske lege in lokalnih okoljskih razmer.

3. Informacije v zvezi z učinkovitostjo in stroški ukrepov nadzora izhajajo iz dokumentov, ki sta jih dobili in pregledali projektna skupina in pripravljalna delovna skupina za obstojna organska onesnaževala. Če ni drugače določeno, se navedene tehnike štejejo za dobro utečene na podlagi izkušenj pri obratovanju.

4. Vedno več je izkušenj z novimi obrati, v katerih se uporabljajo tehnike z nizkimi emisijami, in s prilagajanjem obstoječih obratov. Zato bo treba redno dopolnjevati in spreminjati to prilogo. Najboljše razpoložljive tehnike (BAT) za nove obrate je običajno mogoče uporabiti tudi v že obstoječih obratih, če sta zagotovljena ustrezno prehodno obdobje in prilagoditev.

5. V prilogi so našteti številni ukrepi nadzora, ki zajemajo stroške in učinkovitost. Izbira ukrepa za vsak posamezen primer je odvisna od številnih dejavnikov, kot so gospodarske razmere, tehnološka infrastruktura in zmogljivosti ter kateri koli ukrepi za nadzor nad onesnaževanjem zraka.

6. Najpomembnejša obstojna onesnaževala iz nepremičnih virov so:

(a) poliklorirani dibenzo-p-dioksini / furani (PCDD/F);

(b) heksaklorobenzen (HCB);

(c) policiklični aromatski ogljikovodiki (PAH).

Ustrezne definicije so v prilogi III tega protokola.

II. VEČJI NEPREMIČNI VIRI EMISIJ OBSTOJNIH ORGANSKIH ONESNAŽEVAL

7. Emisije PCDD/F nastajajo pri toplotnih postopkih, pri katerih so udeležene organske snovi in klor, in so posledica nepopolnega zgorevanja ali kemičnih reakcij. Večji nepremični viri PCDD/F so lahko:

(a) sežiganje odpadkov, vključno s sosežigom;

(b) toplotni metalurški postopki, na primer proizvodnja aluminija in drugih barvnih kovin, železa in jekla;

(c) kurilne naprave za proizvodnjo energije;

(d) zgorevanje v gospodinjstvih in

(e) posamezni kemični proizvodni postopki, pri katerih se sproščajo vmesni in stranski produkti.

8. Večji nepremični viri emisij PAH so lahko:

(a) ogrevanje z lesom in premogom v gospodinjstvih;

(b) odprti ogenj, na primer sežiganje smeti, gozdni požari, požiganje strnišč;

(c) proizvodnja koksa ali anod;

(d) proizvodnja aluminija (po Soederbergovem postopku) in

(e) naprave za zaščito lesa, razen za pogodbenice, pri katerih ta kategorija ne pomeni pomembnejšega deleža v celotni emisiji PAH (kot so opredeljeni v prilogi III).

9. Emisije HCB so posledica istih toplotnih in kemičnih postopkov kot emisije PCDD/F, HCB pa nastaja zaradi podobnih mehanizmov. Večji viri emisij HCB so lahko:

(a) sežigalnice odpadkov, vključno s sosežigom;

(b) toplotni viri v metalurški industriji in

(c) uporaba kloriranih goriv v industrijskih pečeh.

III. SPLOŠNE OBLIKE NADZORA NAD EMISIJAMI OBSTOJNIH ORGANSKIH ONESNAŽEVAL

10. Obstaja več možnosti za nadzorovanje ali preprečevanje emisij obstojnih organskih onesnaževal iz nepremičnih virov. Mednje sodijo zamenjava ustreznih vhodnih materialov, spremembe postopkov (tudi postopkov nadzora nad vzdrževanjem in delovanjem) in prilagajanje že obstoječih obratov. V spodnjem seznamu je naveden splošni okvir možnih ukrepov, ki se lahko izvajajo posamično ali kombinirano:

(a) zamenjava vhodnih materialov, če gre za obstojna organska onesnaževala ali če obstaja neposredna povezava med temi materiali in emisijami obstojnih organskih onesnaževal iz tega vira;

(b) najboljše okoljske prakse, kot so skrbno ravnanje, preventivni vzdrževalni programi ali spremembe postopkov, kot je uvedba zaprtih sistemov (na primer v koksarnah ali uporaba inertnih elektrod pri elektrolizi);

(c) spremembe postopkov, tako da se zagotovi popolno zgorevanje in s tem prepreči nastanek obstojnih organskih onesnaževal, in sicer z nadzorovanjem parametrov, kot je temperatura zgorevanja ali zadrževalni čas;

(d) metode čiščenja dimnih plinov, kot so toplotno ali katalitsko sežiganje ali oksidacija, odpraševanje, adsorpcija;

(e) obdelava ostankov, odpadkov in blata iz čistilnih naprav, na primer s toplotno obdelavo ali tako, da postanejo inertni;

11. Stopnje emisij, navedene pri različnih ukrepih v preglednicah 1, 2, 3, 4, 5, 6, 8 in 9, se običajno nanašajo na posamezne primere. Številke ali razponi prikazujejo stopnje emisij kot odstotek mejnih vrednosti emisij pri uporabi klasičnih tehnik.

12. Presoja o stroškovni učinkovitosti lahko temelji na skupnih letnih stroških na enoto zmanjševanja emisij (vključno z naložbenimi in obratovalnimi stroški). Stroške zmanjševanja emisij obstojnih organskih onesnaževal je treba presojati tudi v okviru celotne ekonomike postopka, kot so vpliv ukrepov nadzora in proizvodni stroški. Glede na številne vpletene dejavnike so naložbeni in obratovalni stroški izrazito odvisni od posameznega primera.

IV. TEHNIKE NADZORA NAD ZMANJŠEVANJEM EMISIJ PCDD/F

A. <u>Sežiganje odpadkov</u>

13. Sežiganje odpadkov vključuje sežiganje komunalnih odpadkov, nevarnih odpadkov, medicinskih odpadkov in blata iz čistilnih naprav.

14. Najpomembnejši ukrepi nadzora nad emisijami PCDD/F iz sežigalnic odpadkov so:

(a) primarni ukrepi v zvezi z odpadki, ki se sežigajo;

(b) primarni ukrepi v zvezi s postopkom sežiganja;

(c) ukrepi za nadzor nad fizikalnimi parametri postopka sežiganja in odpadnih plinov (na primer temperaturnega praga, hitrosti ohlajanja, vsebnosti O_2 itn.);

(d) čiščenje dimnih plinov in

(e) obdelava ostankov pri postopku čiščenja.

15. Primarni ukrepi v zvezi z odpadki, ki se sežigajo, pri katerih se vhodni material pripravi tako, da se zmanjša količina halogeniranih snovi in nadomesti z nehalogeniranimi snovmi, pri sežiganju komunalnih ali nevarnih odpadkov niso primerni. Primerneje je prilagoditi postopek sežiganja in vpeljati sekundarne ukrepe za čiščenje dimnih plinov. Priprava vhodnega materiala pa je koristen primarni ukrep za zmanjšanje količine odpadkov, ki je lahko koristen tudi zaradi možnosti recikliranja. Zaradi manjše količine odpadkov za sežiganje ima to lahko za posledico posredno zmanjšanje emisij PCDD/F.

16. Spremembe postopka sežiganja, s katerimi se optimizirajo pogoji zgorevanja, so pomemben in učinkovit ukrep za zmanjševanje emisij PCDD/F (običajno 850 °C ali več, odmera dovajanja kisika glede na kalorično vrednost in konsistenco odpadkov, zadosten zadrževalni čas – 850 °C za približno 2 sekundi – in vrtinčenje plina, izogibanje področjem hladnega plina v sežigalnici itn.). Naprave z zgorevanjem v zvrtinčeni plasti omogočajo temperature, nižje od 850 °C, za doseganje ustreznih vrednosti emisij. V obstoječih sežigalnicah je v ta namen običajno treba prilagoditi in/ali zamenjati opremo, kar morda ni gospodarno v vseh državah. Vsebnost ogljika v pepelu bi bilo treba čim bolj zmanjšati.

17. Ukrepi v zvezi z dimnimi plini. Naslednji ukrepi omogočajo razmeroma učinkovito zmanjšanje vsebnosti PCDD/F v dimnih plinih. Do sinteze de novo pride pri približno 250–450 °C. Ti ukrepi so nujni za nadaljnje zmanjševanje, da se dosežejo želene vrednosti na izhodnem delu sistema:

(a) pranje dimnih plinov (zelo učinkovito in razmeroma poceni);

(b) dodajanje inhibitorjev, kot sta trietanolamin ali trietilamin (lahko zmanjšajo tudi dušikove okside), zaradi varnostnih razlogov pa je treba upoštevati tudi stranske reakcije;

(c) uporaba sistemov za zbiranje prahu pri temperaturi med 800 in 1000 °C, na primer keramičnih filtrov in ciklonov;

(d) uporaba nizkotemperaturnih električnih sistemov in

(e) preprečevanje usedanja letečega pepela v odvodnem sistemu za dimne pline.

18. Metode čiščenja dimnih plinov so:

(a) klasično odpraševanje, s katerim se zmanjšajo emisije na delce vezanih PCDD/F;

(b) selektivno katalitsko zmanjševanje (*selective catalytic reduction* – SCR) ali selektivno nekatalitsko zmanjševanje (*selective non-catalytic reduction* – SNCR);

(c) adsorpcija z aktivnim ogljem ali koksom v sistemih zgorevanja z mirujočo ali zvrtinčeno plastjo;

(d) različne adsorpcijske metode in sistemi optimiziranega postopka izločanja prahu z mešanicami aktivnega oglja, metalurškega koksa, raztopin apna in apnenca v reaktorjih z mirujočo, potujočo ali zvrtinčeno plastjo. Učinkovitost zbiranja plinastih PCDD/F je mogoče izboljšati, če je pod vrhnjo plastjo vrečastega filtra plast aktivnega koksa;

(e) H_2O_2 oksidacija in

(f) metode katalitskega zgorevanja, pri katerih se uporabljajo različne vrste katalizatorjev (to so katalizatorji Pt/Al_2O_3 ali bakrovega kromata z različnimi dodatki za stabiliziranje površine in upočasnitev staranja katalizatorjev).

19. Z zgoraj navedenimi metodami je mogoče doseči stopnjo emisije 0,1 ng TE/m^3 PCDD/F v dimnih plinih. Toda v sistemih z adsorpcijo/filtri z aktivnim ogljem ali koksom je treba poskrbeti, da uhajajoči ogljikov prah ne poveča emisij PCDD/F od te enote naprej. Prav tako se je treba zavedati, da adsorberji in naprave za odpraševanje pred katalizatorji (tehnika selektivnega zmanjševanja s katalizatorjem – SCR) povzročajo nastanek s PCDD/F obremenjenih preostankov, ki jih je treba vrniti v tehnološki postopek ali pa poskrbeti za ustrezno odlaganje.

20. Primerjava med različnimi ukrepi za zmanjšanje PCDD/F v dimnih plinih je zelo kompleksna.V preglednici je navedenih več vrst industrijskih obratov z različnimi zmogljivostmi in zasnovo. Stroškovni parametri vključujejo ukrepe za čim večje zmanjšanje tudi drugih onesnaževal, kot so težke kovine (vezane ali nevezane na delce). Večinoma torej ni mogoče sklepati o neposredni povezavi z zmanjšanjem emisij PCDD/F. Povzetek dostopnih podatkov o različnih ukrepih nadzora je v preglednici 1.

Preglednica 1: Primerjava različnih ukrepov za čiščenje dimnih plinov inspremememb postopkov v sežigalnicah, katerih cilj je zmanjšanje emisij PCDD/F

Ukrep	Stopnja emisij (%)[a/]	Ocena stroškov	Težave/ugotovitve
Primarni ukrepi – prilagoditev vhodnega materiala: – izločitev prekurzorjev in vhodnih materialov, ki vsebujejo klor, in – urejanje tokov odpadkov.	Dobljene stopnje emisij ni-so kvantificirane; kaže, da niso premosorazmerno odvisne od količine vhodnega materiala.		Predhodno ločevanje vhodnega materiala ni učinkovito; zbrati je mogoče le posamezne dele; drugemu materialu, ki vsebuje klor, na primer kuhinjski soli, papirju itn., se ni mogoče izogniti. Pri nevarnih kemičnih odpadkih to ni zaželeno. Koristen in v posebnih primerih uresničljiv primarni ukrep (na primer odpadna olja, električne komponente itn.); lahko je koristen zaradi možnosti recikliranja.
Sprememba postopka sežiganja: – optimizirani pogoji zgorevanja; – izogibanje temperaturam pod 850 °C in hladnim območjem v dimnih plinih; – zadostna vsebnost kisika; nadzor nad količino dovedenega kisika, odvisno od kalorične vrednosti in konsistence vhodnega materiala, in – zadosten zadrževalni čas in vrtinčenje.			Potrebna je prilagoditev celotnega postopka sežiganja.

Ukrep	Stopnja emisij (%)[a/]	Ocena stroškov	Težave/ugotovitve
Ukrepi v zvezi z dimnimi plini:			
Preprečevanje usedanja delcev z:			
– odstranjevalniki saj, mehanskimi rahljalniki zvočni ali parnimi izpihovalniki saj.			Parno izpihovanje lahko poveča stopnjo nastajanja PCDD/F.
Odstranjevanje prahu, običajno v sežigalnicah odpadkov:	< 10	Srednji	Odstranjevanje PCDD/F, adsorbiranih na delce. Metode odstranjevanja delcev iz tokov vročih dimnih plinov se uporabljajo le v poskusnih obratih.
– vrečasti filtri,	1–0,1	Višji	Uporaba pri temperaturah < 150 °C
– keramični filtri,	Majhna učinkovitost		Uporaba pri temperaturah od 800 do 1000 °C.
– cikloni in	Majhna učinkovitost	Srednji	
– elektrostatično odpraševanje.	Srednja učinkovitost		Uporaba pri temperaturi 450 °C. Možno spodbujanje sinteze PCDD/F de novo, večje emisije NO_x, manjša rekuperacija toplote.
Katalitska oksidacija.			Uporaba pri temperaturah od 800 do 1000 °C. Potrebno je ločeno zmanjševanje emisij iz plinaste faze.
Pranje plina.			
Visokozmogljiva adsorpcijska enota z dodanimi delci aktivnega oglja (elektrodinamična Venturijeva cev).			
Selektivno katalitsko zmanjševanje (SCR).		Visoki naložbeni in nizki obratovalni stroški	Zmanjšanje NO_x ob dodanem NH_3, potrebno je veliko prostora, porabljene katalizatorje in ostanke aktivnega ogljika ali lignitnega koksa je mogoče odlagati, katalizatorje lahko proizvajalci večinoma ponovno obdelajo, aktivni ogljik ali lignitni koks je mogoče sežigati v strogo nadzorovanih razmerah.
Različne metode mokre in suhe adsorpcije z mešanicami aktivnega oglja, metalurškega koksa, raztopin apna in apnenca v reaktorjih z mirujočo, potujočo ali zvrtinčeno plastjo:			
– reaktor z mirujočo plastjo, adsorpcija z aktivnim ogljem ali metalurškim koksom, in	< 2 (0,1 ng TE/m^3)	Visoki naložbeni in srednji obratovalni stroški	Odstranjevanje ostankov; potrebno je veliko prostora.
– reaktor s kanaliziranim tokom ali krožečo zvrtinčeno plastjo, z dodanimi raztopinami aktivnega koksa/apna ali apnenca in v nadaljevanju z vrečastim filtrom.	< 10 (0,1 ng TE/m^3)	Nizki naložbeni, srednji obratovalni stroški	Odstranjevanje ostankov.
Dodajanje H_2O_2.	< 2–5 (0,1 ng TE/m^3)	Nizki naložbeni, nizki obratovalni stroški	

[a/] Preostale emisije v primerjavi s stanjem, ko ni ukrepov za zmanjšanje.

21. Sežigalnice medicinskih odpadkov so lahko v mnogih državah večji vir emisij PCDD/F. Posebni medicinski odpadki, kot so človeški anatomski deli, okuženi odpadki, igle, kri, plazma in citostatiki, se obravnavajo kot posebna oblika nevarnih odpadkov, medtem ko se druge vrste medicinskih odpadkov pogosto sežigajo pri viru v šaržah. Sežigalnice z nezveznim obratovanjem lahko izpolnijo enake zahteve glede zmanjšanja emisij PCDD/F kot druge sežigalnice odpadkov.

22. Pogodbenice bodo morda želele sprejeti politiko spodbujanja sežiganja komunalnih in medicinskih odpadkov v večjih regionalnih sežigalnicah namesto v manjših. Ob takem pristopu je uvajanje najboljših razpoložljivih tehnik (BAT) lahko stroškovno učinkovitejše.

23. Obdelava ostankov iz postopkov čiščenja dimnih plinov. V nasprotju s pepelom iz sežigalnic vsebujejo ti ostanki razmeroma visoke koncentracije težkih kovin, organskih onesnaževal (vključno s PCDD/F), kloridov in sulfidov. Odlaganje teh ostankov je zato treba strogo nadzorovati. Zlasti pri mokrem izločanju prahu nastanejo velike količine kislih in onesnaženih tekočih odpadkov. Obstajajo nekateri posebni načini obdelave teh ostankov. Mednje sodijo:

(a) katalitska obdelava prahu iz vrečastih filtrov pri nizkih temperaturah in brez kisika;

(b) izločanje prahu iz vrečastih filtrov s postopkom 3-R (izločanje težkih kovin s kislinami in uničevanje organskih snovi s sežiganjem);

(c) steklenenje prahu iz vrečastih filtrov;

(d) nadaljnje metode imobilizacije in

(e) uporaba plazemske tehnologije.

B. Toplotni postopki v metalurški industriji

24. Posamezni postopki v metalurški industriji so lahko pomembni viri emisij PCDD/F. To so:

(a) primarna železarska in jeklarska industrija (na primer plavži, obrati za sintranje, obrati za peletiranje železa);

(b) sekundarna železarska in jeklarska industrija ter

(c) primarna in sekundarna industrija barvnih kovin (proizvodnja bakra).

Ukrepi za nadzor emisijami PCDD/F v metalurški industriji so povzeti v preglednici 2.

25. Ob uporabi ukrepov za nadzor nad emisijami lahko naprave za proizvodnjo in obdelavo kovin, ki so vir emisij PCDD/F, zadostijo zahtevam glede največje dovoljene koncentracije 0,1 ng TE/m^3 (pri količini pretoka odpadnega plina > 5000 m^3/h).

Preglednica 2: Zmanjšanje emisij PCDD/F v metalurški industriji

Ukrep	Stopnja emisij (%)[a]	Ocena stroškov	Težave/ugotovitve
Obrati za sintranje			
Primarni ukrepi:			
– optimiziranje/zaprtje tračnih transporterjev za sinter;		Nizki	Ni 100-odstotno izvedljivo.
– vračanje odpadnih plinov v obtok, na primer sintranje z optimiziranimi emisijami (EOS) zmanjša pretok odpadnega plina za pribl. 35% (zmanjšanje stroškov nadaljnjih sekundarnih ukrepov zaradi manjšega pretoka odpadnih plinov), zmogljivost 1 mio. Nm^3/h.	40	Nizki	
Sekundarni ukrepi:			
– elektrostatično odpraševanje + molekulsko sito;	Srednja učinkovitost	Srednji	
– dodajanje mešanic apnenca/aktivnega ogljika;	Visoka učinkovitost (0,1 ng TE/m^3)	Srednji	
– visokozmogljivi izločevalniki prahu – obstoječa naprava: AIRFINE (Voest Alpine Stahl Linz) od leta 1993 za 600.000 Nm^3/h; druga naprava se načrtuje na Nizozemskem (Hoogoven) za leto 1998.	Visoka učinkovitost zmanjšanja emisij na 0,2–0,4 ng TE/m^3	Srednji	0,1 ng TE/m^3 je mogoče doseči ob večji porabi energije; takih naparav še ni.

Ukrep	Stopnja emisij (%)[a]	Ocena stroškov	Težave/ugotovitve
Proizvodnja barvnih kovin (na primer bakra)			
Primarni ukrepi:			
– predhodno razvrščanje sekundarnih surovin, izločanje materiala, ki vsebuje plastične snovi, ali s PVC onesnaženih sekundarnih surovin, odstranjevanje plasti površinskih nanosov in uporaba izolacijskega materiala, ki ne vsebujejo klora.		Nizki	
Sekundarni ukrepi:			
– pranje vročih odpadnih plinov;	Visoka učinkovitost	Nizki	
– uporaba kisika ali s kisikom obogatenega zraka pri gorenju, vbrizgavanje kisika v jaškovno peč (da se zagotovita popolno zgorevanje in zmanjšanje količine odpadnih plinov na najmanjšo mero);	5–7 (1,5–2 TE/m^3)	Visoki	
– reaktor z mirujočo plastjo ali z zvrtinčenim curkom z adsorpcijo z aktivnim ogljem ali s prahom metalurškega koksa;	(0,1 ng TE/m^3)	Visoki	
– katalitska oksidacija, in	0,1 ng TE/m^3)	Visoki	
– skrajšanje zadrževalnega časa v kritičnem temperaturnem območju v sistemu odpadnih plinov.			
Proizvodnja železa in jekla			
Primarni ukrepi:			
– čiščenje olja s sekundarnih surovin pred nalaganjem v proizvodne posode;		Nizki	Uporabiti je treba čistilne raztopine
– odstranjevanje naključnega organskega materiala, kot so olja, emulzije, maščobe, barva in plastika pri čiščenju vhodnega materiala;		Nizki	
– zmanjševanje specifično visokih količin odpadnih plinov;		Srednji	
– ločeno zbiranje in obdelava emisij pri polnjenju in praznjenju.		Nizki	
Sekundarni ukrepi:			
– ločeno zbiranje in obdelava emisij pri polnjenju in praznjenju;		Nizki	
– vrečasti filtri v povezavi z vbrizgavanjem koksa.	<1	Srednji	
Sekundarna proizvodnja aluminija			
Primarni ukrepi:			
– izogibanje halogeniranemu materialu (heksakloretan);		Nizki	
– izogibanje mazivom, ki vsebujejo klor (na primer klorirani parafini), in		Nizki	
– čiščenje in razvrščanje onesnaženih sekundarnih surovin, na primer odstranjevanje plasti površinskih nanosov z ostružki in sušenje, ločevanje s tehniko ločevanja na podlagi različnih gostot usedanje v vrtinčastem toku.			

Ukrep	Stopnja emisij (%)[a]	Ocena stroškov	Težave/ugotovitve
Sekundarni ukrepi:			
– enostopenjski ali večstopenjski vrečasti filter in aktiviranje apnenca/aktivnega oglja pred filtrom;	< 1 (0,1 ng TE/m^3)	Srednji/ visoki	
– zmanjšanje pretokov na najmanjšo mero ter ločeno odvajanje in čiščenje različno onesnaženih odpadnih plinov;		Srednji/ visoki	
– preprečevanje usedanja delcev iz odpadnih plinov in omogočanje hitrega prehoda skozi kritična temperaturna območja, in		Srednji/ visoki	
– izboljšanje predobdelave aluminijskih sekundarnih surovin z drobilnikom z uporabo tehnike ločevanja na podlagi različnih gostot, razvrščanje z usedanjem v vrtinčastem toku.		Srednji/ visoki	

[a/] Preostale emisije v primerjavi s stanjem, ko ni ukrepov za zmanjšanje.

Obrati za sintranje

26. Meritve v obratih za sintranje v železarstvu in jeklarstvu običajno pokažejo emisije PCDD/F v razponu od 0,4 do 4 ng TE/m^3. Enkratne meritve v nekem obratu, v katerem ni nobenih ukrepov za nadzor nad emisijami, so pokazale koncentracijo 43 ng TE/m^3.

27. Halogenirane spojine imajo lahko za posledico nastajanje PCDD/F, če pridejo v napravo za sintranje z vhodnimi materiali (koksova žlindra, sol, vsebovana v rudi) ali z dodanimi recikliranimi materiali (na primer valjarniška škaja, prah iz žrelnih plavžnih plinov, prah iz filtrov ali blato iz naprav za čiščenje odpadnih vod). Podobno kot pri sežiganju odpadkov pa tudi tukaj ni jasne povezave med vsebnostjo klora v vhodnem materialu in emisijami PCDD/F. Primerna ukrepa bi bila lahko izogibanje onesnaženim odpadkom in razmaščevanje valjarniške škaje, preden pride v napravo za sintranje.

28. Najučinkovitejše zmanjšanje emisij PCDD/F je mogoče doseči s kombinacijo različnih sekundarnih ukrepov:

(a) recirkulacija odpadnih plinov znatno zmanjša emisije PCDD/F. Poleg tega se znatno zmanjša pretok odpadnih plinov, s čimer se zmanjšajo stroški vgraditve morebitnih dodatnih sistemov nadzora nad emisijami na izhodnem delu;

(b) vgraditev vrečastih filtrov (ponekod v kombinaciji z elektrofiltri) ali elektrofiltrov z vbrizgavanjem mešanic aktivnega oglja/metalurškega koksa/apnenca v odpadne pline;

(c) metode izločanja prahu, katerih del je tudi predhodno pranje odpadnih plinov, luženje z intenzivnim izločanjem prahu in ločevanje z odcejanjem. Doseči je mogoče emisije od 0,2 do 0,4 ng TE/m^3. Z dodajanjem ustreznega adsorpcijskega sredstva, na primer lignitnega koksa/premogovega drobirja, je mogoče doseči koncentracijo emisij 0,1 ng TE/m^3.

Primarna in sekundarna proizvodnja bakra

29. V obstoječih obratih za primarno in sekundarno proizvodnjo bakra se lahko doseže po čiščenju dimnih plinov stopnja emisije PCDD/F od nekaj pikogramov do 2 ng TE/m^3. Emisije ene same jaškovne peči za baker so pred optimiziranjem agregatov znašale do 29 ng TE/m^3 PCDD/F. Običajno obstaja velik razpon emisijskih vrednosti PCDD/F iz teh obratov zaradi velikih razlik v surovini, ki se uporablja v različnih agregatih in tehnoloških postopkih.

30. Na splošno so za zmanjšanje emisij PCDD/F primerni naslednji ukrepi:

(a) predhodno razvrščanje sekundarnih surovin;

(b) predhodna obdelava sekundarnih surovin, na primer odstranjevanje plastičnih ali PVC-nanosov, predhodna obdelava odpadnih kablov z uporabo izključno hladnih/mehanskih metod;

(c) pranje vročih odpadnih plinov (možnost koristne uporabe toplote), s čimer se skrajša zadrževalni čas v kritičnem temperaturnem območju v sistemu odpadnih plinov;

(d) uporaba kisika ali s kisikom obogatenega zraka pri gorenju ali vbrizgavanje kisika v jaškovno peč (zagotovitev popolnega zgorevanja in zmanjšanje količine odpadnih plinov na najmanjšo mero);

(e) adsorpcija v reaktorju z mirujočo plastjo ali z zvrtinčenim curkom z aktivnim ogljem ali s prahom metalurškega koksa;

(f) katalitska oksidacija.

Proizvodnja jekla

31. Emisije PCDD/F iz jeklarskih konverterjev za proizvodnjo jekla in iz kupolk na vroč zrak, iz elektropeči in iz elektrolučnih peči za taljenje litega železa so znatno nižje od 0,1 ng TE/m^3. Za plavže na hladen zrak in rotacijske peči (taljenje litega železa) so značilne večje emisije PCDD/F.

32. Pri elektrolučnih pečeh, ki se uporabljajo v sekundarni jeklarski proizvodnji, se lahko doseže vrednost koncentracije emisij 0,1 ng TE/m^3 ob uporabi naslednjih ukrepov:

(a) ločeno zbiranje emisij pri polnjenju in praznjenju ter

(b) uporaba vrečastih filtrov ali elektrofiltrov v povezavi z vbrizgavanjem koksa.

33. Vhodni material za elektroobločne peči pogosto vsebuje olja, emulzije ali maščobe. Običajni primarni ukrepi za zmanjšanje PCDD/F so razvrščanje, razmaščevanje in odstranjevanje plasti površinskih nanosov s sekundarnih surovin, ki lahko vsebujejo plastiko, gumo, barve, pigmente in vulkanizacijske dodatke.

Talilnice v sekundarni aluminijski industriji

34. Emisije PCDD/F iz talilnic v sekundarni aluminijski industriji se gibljejo v razponu od približno 0,1 do 14 ng TE/m^3. Stopnje emisij so odvisne od vrste talilnih agregatov, uporabljenih materialov in uporabljenih tehnik čiščenja odpadnih plinov.

35. Enostopenjski ali večstopenjski vrečasti filter v povezavi z apnencem/aktivnim ogljem/metalurškim koksom pred filtrom torej zadošča zahtevi po koncentraciji emisij 0,1 ng TE/m^3, s tem da je učinkovitost zmanjšanja 99-odstotna.

36. Upoštevajo se lahko tudi naslednji ukrepi:

(a) zmanjšanje pretokov na najmanjšo mero ter ločeno odvajanje in čiščenje različno onesnaženih odpadnih plinov;

(b) preprečevanje usedanja delcev iz odpadnih plinov;

(c) hiter prehod skozi kritična temperaturna območja;

(d) izboljšanje predhodnega razvrščanja sekundarnih aluminijskih surovin z drobilnikom z uporabo tehnike ločevanja na podlagi različnih gostot in razvrščanje z usedanjem v vrtinčastem toku;

(e) izboljšanje predhodnega čiščenja sekundarnih aluminijskih surovin z odstranjevanjem površinskih nanosov in sušenje.

37. Možnosti (d) in (e) sta pomembni, ker ni verjetno, da bi se s sodobnimi tehnikami taljenja (pri katerih ni tokov halogenidov) lahko predelale tudi sekundarne surovine nižje kakovosti, ki jih je mogoče uporabiti v rotacijskih pečeh.

38. V okviru Konvencije o varstvu morskega okolja severovzhodnega Atlantika še vedno potekajo razprave o reviziji prejšnjega priporočila, naj se postopno opusti uporaba heksakloretana v aluminijski industriji.

39. Talino je mogoče obdelati s sodobno tehnologijo, na primer z mešanico dušika in klora v razmerjih med 9: 1 in 8: 2, z opremo za vbrizgavanje plina za fino disperzijo, s predhodnim in naknadnim prepihovanjem z dušikom in z vakuumskim razmaščevanjem. Ob uporabi mešanice dušika in klora je bila izmerjena koncentracija emisij PCDD/F približno 0,03 ng TE/m^3 (v primerjavi z vrednostmi > 1 ng TE/m^3, doseženimi pri obdelavi samo s klorom). Klor je potreben za odstranjevanje magnezija in drugih nezaželenih sestavin.

C. Zgorevanje fosilnih goriv v elektrarnah in toplarnah ter industrijskih kotlovnicah

40. Zaradi izboljšanja energetskega izkoristka in varčevanja z energijo pri zgorevanju fosilnih goriv v elektrarnah in toplarnah ter industrijskih kotlovnicah (toplotna zmogljivost > 50 MW) se zmanjša potreba po gorivu in s tem se zmanjšajo emisije vseh onesnaževal. Zaradi tega se zmanjšajo tudi emisije PCDD/F. Odstranjevanje klora iz premoga ali olja ne bi bilo gospodarno, vsekakor pa bo usmeritev v uporabo plina pripomoglo k zmanjšanju emisij PCDD/F v tem sektorju.

41. Upoštevati je treba, da se emisije PCDD/F lahko znatno povečajo, če se gorivu dodajo odpadki (blato iz čistilnih naprav za odpadne vode, odpadno olje, gumijasti odpadki itn.). Sežiganje odpadkov za pridobivanje energije je dopustno le tam, kjer obstaja sistem za čiščenje odpadnih plinov, ki zagotavlja zelo učinkovito zmanjšanje PCDD/F (opisano v razdelku A zgoraj).

42. Z uporabo tehnik za zmanjšanje emisij dušikovih oksidov, žveplovega dioksida in delcev iz dimnih plinov se lahko odpravijo tudi emisije PCDD/F. Pri uporabi teh tehnik se bo učinkovitost odstranjevanja PCDD/F razlikovala od obrata do obrata. Nenehno potekajo raziskave, kako izboljšati tehnike odstranjevanja PCDD/F, vendar dokler ne bodo na voljo v industrijskem merilu, ni mogoče nobene izrecno označiti kot najboljšo razpoložljivo tehniko za odstranjevanje PCDD/F.

D. Kurjenje v gospodinjstvih

43. Prispevek naprav za kurjenje v gospodinjstvih k skupni emisiji PCDD/F je manjši, kadar so dovoljena goriva pravilno uporabljena. Poleg tega lahko zaradi različnih vrst in kakovosti goriva, gostote naprav na določenem zemljepisnem območju in različne uporabe pride do velikih regionalnih razlik v emisijah.

44. Kurišča v gospodinjstvih imajo slabši izkoristek dimnih plinov in slabšo stopnjo zgorevanja ogljikovodikov v gorivih kot velike zgorevalne naprave. To velja še posebej takrat, kadar se uporabljajo trdna goriva, kot sta les in premog, ko se koncentracije emisij PCDD/F gibljejo med 0,1 do 0,7 ng TE/m^3.

45. Pri kurjenju embalaže, dodane trdnim gorivom, se povečajo emisije PCDD/F. Čeprav je to v nekaterih državah prepovedano, se dogaja, da v gospodinjstvih kurijo smeti in embalažo. Zaradi vse višjih stroškov za odvažanje smeti se dogaja, da se odpadki iz gospodinjstva kurijo v domačih kuriščih. Uporaba lesa z dodano odpadno embalažo lahko povzroči povečanje emisij PCDD/F z 0,06 ng TE/m^3 (izključno les) na 8 ng TE/m^3 (preračunano na 11 volumskih odstotkov O_2). Te izsledke so potrdile raziskave v več državah, kjer so izmerili do 114 ng TE/m^3 (preračunano na 13 volumskih odstotkov kisika) v dimnih plinih iz kurilnih naprav v gospodinjstvih, kjer se kuri odpadni material.

46. Emisije iz kurilnih naprav v gospodinjstvih je mogoče zmanjšati z omejevanjem vhodnega materiala na kakovostno gorivo in s preprečevanjem kurjenja odpadkov, halogeniranih plastičnih snovi in drugih materialov. Pri doseganju tega cilja lahko pripomorejo programi seznanjanja kupcev/uporabnikov kurilnih naprav za gospodinjstva.

E. Naprave za kurjenje lesa (zmogljivost < 50 MW)

47. Rezultati meritev kažejo, da se pri napravah za kurjenje lesa pojavljajo emisije PCDD/F nad 0,1 ng TE/m^3 v dimnih plinih predvsem v neugodnih razmerah zgorevanja in/ali kadar je v gorečih snoveh večja vsebnost kloriranih sestavin kot v neobdelanem lesu. Skupna koncentracija ogljika v dimnih plinih je znak slabega zgorevanja. Ugotovljene so bile povezave med emisijami CO, kakovostjo zgorevanja in emisijami PCDD/F. Preglednica 3 je povzetek nekaterih koncentracij in faktorjev emisij, ki veljajo za naprave za kurjenje lesa.

Preglednica 3: Razpon koncentracij in faktorjev emisij pri napravah za kurjenjelesa

Gorivo	Koncentracija emisije (ng TE/m^3)	Faktor emisije (ng TE/kg)	Faktor emisije (ng/GJ)
Naravni les (bukev)	0,02–0,10	0,23–1,3	12–70
Drobir naravnega lesa iz gozda	0,07–0,21	0,79–2,6	43–140
Iverna plošča	0,02–0,08	0,29–0,9	16–50
Gradbeni odpadni les	2,7–14,4	26–173	1400–9400
Odpadki iz gospodinjstva	114	3230	
Oglje	0,03		

48. Zgorevanje odpadkov gradbenega lesa (odpadnega gradbenega lesa) na pomičnem kurišču povzroča razmeroma visoke emisije PCDD/F v primerjavi z zgorevanjem naravnega lesa. Primarni ukrep za zmanjšanje emisij je izogibanje uporabi obdelanega odpadnega lesa v napravah za kurjenje lesa. Za zmanjšanje emisij PCDD/F na najmanjšo mero bi bilo treba obdelani les kuriti le v napravah z ustreznim čiščenjem dimnih plinov.

V. TEHNIKE NADZOROVANJA ZA ZMANJŠANJE EMISIJ POLICIKLIČNIH AROMATIČNIH OGLJIKOVODIKOV (PAH)

A. Proizvodnja koksa

49. Med proizvodnjo koksa se PAH sproščajo v zrak predvsem:

(a) med polnjenjem peči skozi odprtine za polnjenje;

(b) zaradi uhajanja skozi vrata peči, po odvodnih cevih in skozi pokrove odprtin za polnjenje in

(c) pri potiskanju in ohlajanju koksa.

50. Koncentracija benzo(a)pirena (BaP) znatno niha med posameznimi viri v koksarniški bateriji. Največje koncentracije BaP so na vrhu baterije in v neposredni bližini vrat.

51. Emisije PAH iz proizvodnje koksa je mogoče zmanjšati s tehničnim izboljševanjem obstoječih integriranih železarskih in jeklarskih obratov. Da bi to dosegli, bo morda treba zapreti in zamenjati stare koksarniške baterije ter v celoti zmanjšati proizvodnjo koksa, na primer z vbrizgavanjem visokokaloričnega premoga v proizvodnji jekla.

52. Strategija zmanjšanja emisij PAH iz koksarniških baterij bi morala vključevati naslednje tehnične ukrepe:

(a) polnjenje koksarniških peči:

– zmanjšanje emisij delcev pri nakladanju premoga iz bunkerja na polnilne vozičke;

– zaprti sistemi za prenos premoga, kadar se uporablja predgretje premoga;

– izločanje polnilnih plinov in njihova poznejša obdelava, in sicer tako da se spustijo v sosednjo peč ali skozi zbiralni vod v sežigalnico in potem še skozi odpraševalno napravo. Ponekod se izločeni polnilni plini sežigajo na polnilnih vozičkih, vendar sta vpliv na okolje in varnost sistemov, pri katerih se uporabljajo polnilnih vozičkih, manj zadovoljiva. Zagotoviti je treba zadosten vlek z vbrizgavanjem pare ali vode v odvodne cevi;

(b) emisije pri pokrovih odprtin za polnjenje med koksanjem je mogoče preprečevati:

– s pokrovi, ki zelo dobro tesnijo;

– z ognjevzdržno zatesnitvijo pokrovov z glino (ali drugim enako učinkovitim materialom) po vsakem polnjenju;

– s čiščenjem pokrovov in okvirov, preden se odprtina zapre;

– tako da se zagotovi, da na stropovih peči ni ostankov premoga;

(c) pokrovi odvodnih cevi bi morali imeti vodno tesnjenje, ki preprečuje emisije plinov in katrana, pravilno delovanje vodnega tesnjenja pa bi bilo treba zagotavljati z rednim čiščenjem;

(d) mehanizem za upravljanje vrat koksarniške peči bi moral biti opremljen s sistemom za čiščenje površine tesnil na okvirih vrat in na vratih;

(e) vrata koksarniške peči:

– uporabljati bi bilo treba zelo učinkovito tesnjenje (na primer opnasta vrata na vzmet);

– tesnila na okvirih vrat in na vratih peči bi bilo treba temeljito očistiti ob vsaki uporabi;

– vrata bi morala biti oblikovana tako, da bi omogočila vgraditev sistemov za izločanje delcev s priključkom na odpraševalno napravo (prek zbiralnega voda) med potiskanjem;

(f) naprava za prenos koksa bi morala imeti vgrajeno napo, nepremični kanal in nepremični sistem za čiščenje plinov (po možnosti vrečasti filter);

(g) za hlajenje koksa bi bilo treba uporabljati postopke z majhnimi emisijami, na primer suho hlajenje koksa. Najbolje bi bilo nadomestiti mokro hlajenja koksa s suhim hlajenjem pod pogojem, da se uporablja zaprt obtočni sistem, s čimer se prepreči nastajanje odpadne vode. Pri ravnanju s suho hlajenim koksom bi bilo treba zmanjšati nastajanje prahu.

53. Pri postopku proizvodnje koksa, imenovanem »koksanje brez zbiranja stranskih proizvodov za ponovno rabo«, prihaja do bistveno manjših emisij PAH kot pri bolj klasičnem postopku, pri katerem se zbirajo stranski proizvodi, in sicer zato ker peči delujejo pod negativnim tlakom, s čimer se prepreči uhajanje v ozračje pri vratih peči. Med koksanjem se surovi koksarniški plin odstranjuje s pomočjo naravnega vleka, ki v pečeh ohranja negativni tlak. Te peči niso zasnovane za zbiranje kemičnih stranskih produktov iz surovega koksarniškega plina. Pline, ki nastajajo pri koksanju (vključno s PAH), pa je mogoče učinkovito sežigati pri visokih temperaturah in dolgem zadrževalnem času. Odpadna toplota iz teh sežigalnic se uporablja za pridobivanje energije za koksanje, odvečno toploto pa je mogoče uporabiti za pridobivanje pare. Zaradi gospodarnosti bi lahko pri tej vrsti koksanja potrebovali dodatno enoto za proizvajanje elektrike iz odvečne pare. Trenutno obratujeta le dve taki koksarni brez zbiranja stranskih produktov, ena v ZDA in druga v Avstraliji. Bistvo tehnološkega postopa je koksarniška peč z enim samim dimovodom za pridobivanje koksa brez zbiranja stranskih produktov in s sežigalno komoro ob dveh pečeh. Postopek polnjenja in koksanja poteka izmenično v eni in drugi peči. Tako ena od peči vedno dovaja koksarniški plin v sežigalno komoro. Zgorevanje plina v sežigalni komori zagotavlja vir toplote. Sežigalna komora je zasnovana tako, da zagotavlja potreben zadrževalni čas (približno 1 sekunda) in visoko temperaturo (najmanj 900 °C).

54. Zagotoviti bi bilo treba učinkovit program spremljanja morebitnega slabega tesnjenja pri vratih peči, odvodnih cevih in pokrovih odprtin za polnjenje. To vključuje spremljanje in ugotavljanje slabega tesnjenja in takojšnje popravilo oziroma vzdrževanje. Tako je mogoče doseči znatno zmanjšanje razpršenih emisij.

55. S prilagajanjem že obstoječih koksarniških baterij, da bi se olajšala kondenzacija dimnih plinov iz vseh virov (z zbiranjem toplote), se zmanjšanje emisije PAH v zrak poveča s 86 odstotkov na več kot 90 odstotkov (brez upoštevanja obdelave odpadnih vod). Če se upoštevajo zbrana in ponovno uporabljena energija, ogreta voda, plin za sintezo in prihranjena hladilna voda, je mogoče amortizirati stroške naložbe v petih letih.

56. S povečevanjem prostornin koksarniških peči se zmanjša skupno število peči, odprtin na pečeh (količine potiskov skozi peč na dan), tesnil na koksarniški bateriji in s tem tudi emisije PAH. Zaradi znižanja stroškov obratovanja in delovne sile se poveča tudi produktivnost.

57. Sistemi suhega hlajenja koksa pomenijo večje stroške naložbe kot mokri sistemi. Višje obratovalne stroške je mogoče nadomestiti z zbiranjem in ponovno uporabo toplote v postopku predgrevanja koksa. Energijski izkoristek kombiniranega suhega hlajenja koksa/sistema predgrevanja premoga se zviša z 38 na 65%. Predgrevanje premoga poveča produktivnost za 30%. To je mogoče povečati celo na 40%, ker je proces koksanja bolj homogen.

58. Vsi rezervoarji in oprema za shranjevanje in obdelavo premogovega katrana in z njim povezanih produktov bi morali biti opremljeni z učinkovitim sistemom za zbiranje in/ali uničevanje hlapov. Obratovalne stroške sistemov za uničevanje hlapov je mogoče znižati z naknadnim zgorevanjem brez dovajanja toplote, če je koncentracija ogljikovih spojin v odpadkih dovolj visoka.

59. V preglednici 4 je povzetek ukrepov za zmanjšanje emisij PAH v koksarnah.

Preglednica 4: Nadzorovanje emisij PAH pri koksanju

Ukrep	Stopnja emisij (%) [a/]	Ocena stroškov	Težave/ugotovitve
Prilagajanje starih obratov s kondenzacijo dimnih plinov iz vseh virov vključuje naslednje ukrepe:	Skupno <10 (brez odpadne vode)	Visoki	Emisije v odpadno vodo so pri vodnem hlajenju zelo velike. Ta metoda se lahko uporablja le, če se voda ponovno uporabi v zaprtem sistemu.
– odvajanje in naknadno zgorevanje polnilnih plinov med polnjenjem peči ali spuščanjem plinov v sosednjo peč, če je mogoče;	5	(Amortizacija stroškov naložbe je mogoča v 5 letih, če se upoštevajo zbrana in ponovno uporabljena energija, ogreta voda, plin za sintezo in prihranjena hladilna voda.)	
– čim boljše preprečevanje emisij pri pokrovih odprtin za polnjenje, na primer s posebno zasnovo pokrovov in z učinkovitimi metodami tesnjenja. Uporabljati je treba zelo učinkovito zatesnjena vrata peči za koksanje. Čiščenje okvirov in pokrovov odprtin za polnjenje, preden se zaprejo;	< 5		
– odpadne pline pri potiskanju je treba zbirati v skupni vod in odvajati v odpraševalno napravo;	< 5		
– mokro hlajenje koksa je mogoče le, če pri tem ne nastaja odpadna voda.			

Ukrep	Stopnja emisij (%) [a/]	Ocena stroškov	Težave/ugotovitve
Postopki hlajenja koksa z majhnimi emisijami, na primer suho hlajenje.	Ni emisij v vodo.	Večji stroški naložbe kot za mokro hlajenje (a nižji stroški ob predgrevanju koksa in uporabi odpadne toplote).	
Večja uporaba visokoprostorninskih peči, s čimer se zmanjšata število odprtin in površina zatesnjenih mest.	Znatna.	Naložba približno 10% višja kot za klasično koksarno.	Večinoma je potrebna popolna prilagoditev ali pa vgradnja nove naprave za koksanje.

[a/] Preostale emisije v primerjavi s stanjem, ko ni ukrepov za zmanjšanje.

B. Proizvodnja anod

60. Emisije PAH iz proizvodnje anod je treba obravnavati podobno kot emisije iz proizvodnje koksa.
61. Za zmanjšanje emisij prahu, onesnaženega s PAH, se uporabljajo naslednji sekundarni ukrepi:
(a) elektrostatično izločanje katrana;
(b) kombinacija klasičnega elektrofiltra za katran in mokrega elektrofiltra kot učinkovitejšega tehničnega ukrepa;
(c) toplotno naknadno zgorevanje odpadnih plinov in
(d) suho čiščenje prahu z apnencem/petrolkoksom ali aluminijevim oksidom (Al_2O_3).
62. Obratovalne stroške za postopek toplotnega naknadnega zgorevanja je mogoče zmanjšati s pomočjo naknadnega zgorevanja brez dovajanja toplote, če je koncentracija ogljikovih spojin v odpadnem plinu dovolj visoka. V preglednici 5 je povzetek ukrepov za zmanjšanje emisij PAH pri proizvodnji anod.

Preglednica 5: Nadzorovanje emisij PAH pri proizvodnji anod

Ukrep	Stopnja emisij (%) [a/]	Ocena stroškov	Težave/ugotovitve
Posodabljanje starih obratov z zmanjševanjem razpršenih emisij vključuje naslednje ukrepe: – zmanjšanje uhajanja; – namestitev prožnih tesnil na vrata peči; – odvajanje in poznejša obdelava polnilnih plinov bodisi z odvajanjem v sosednjo peč bodisi skozi zbirni vod v sežigalnico in potem še v odpraševalno napravo na tleh; – hladilni sistemi za koksarniške peči in – odvajanje in čiščenje emisij delcev koksa.	3–10	Visoki	
Uveljavljene tehnologije za proizvodnjo anod na Nizozemskem: – nova peč s suhim pralnikom prahu (z apnencem/petrolkoksom ali z aluminijem); – recikliranje odpadne vode.	45–50		Uporabljeno na Nizo-zemskem leta 1990. Čiščenje prahu z apnencem ali petrolkoksom je učinkovito za zmanjševanje PAH; z aluminijem ni znano.
Najboljši razpoložljivi tehniki (BAT):			
– elektrostatično odpraševanje in	2–5		Potrebno je redno čiščenje katrana.
– naknadno toplotno sežiganje	15	Nižji obratovalni stroški pri načinu brez dovajanja toplote.	Način brez dovajanje toplote le, če je koncentracija PAH v odpadnem plinu visoka.

[a/] Preostale emisije v primerjavi s stanjem, ko ni ukrepov za zmanjšanje.

C. Aluminijska industrija

63. Aluminij se proizvaja iz aluminijevega oksida (Al_2O_3) z elektrolizo v zaporedno vezanih posodah (celicah). Glede na vrsto anode gre bodisi za posode s predpečenimi anodami bodisi za Soederbergove posode.

64. Posode s predpečenimi anodami so opremljene z anodami kalciniranih (žganih) blokov ogljika, ki se po delni porabi zamenjajo. Soederbergove anode so žgane v celici z mešanico petrolkoksa in katranske smole, ki deluje kot vezivo.

65. Pri Soederbergovem postopku se sproščajo zelo velike emisije PAH. Med primarne ukrepe zmanjševanja emisij sodita posodabljanje obstoječih obratov in optimiziranje tehnoloških postopkov, s katerimi bi bilo mogoče zmanjšati emisije PAH za 70 do 90%. Doseči je mogoče stopnjo emisije 0,015 kg B(a)P/tono aluminija. Zamenjava obstoječih Soederbergovih celic s predpečenimi anodami bi sicer zahtevala obsežno rekonstrukcijo obstoječega postopka, vendar bi skoraj v celoti odpravila emisije PAH. Investicijski stroški za tako zamenjavo so zelo visoki.

66. V preglednici 6 je povzetek ukrepov za zmanjšanje emisij PAH iz proizvodnje aluminija.

Preglednica 6: Nadzor nad emisijami PAH pri proizvodnji aluminija s Soederbergovim postopkom

Ukrep	Stopnja emisij (%) [a/]	Ocena stroškov	Težave/ugotovitve
Zamenjava Soederbergovih elektrod: – s predpečenimi elektrodami (tako se je mogoče izogniti uporabi smolnega veziva); – z inertnimi anodami.	3–30	Višji stroški za elektrode, približno 800 mio. USD	Soederbergove elektrode so cenejše kot predpečene, ker ni potreben obrat za žganje anod. Raziskave potekajo, vendar niso obetajoče. Pravilno izvajanje postopka in spremljanje emisij sta bistveni za nadzor nad emisijami. Slabo delovanje naprav lahko povzroči znatne razpršene emisije.
Zaprti sistemi predpečenja s centralnim doziranjem aluminijevega oksida in učinkovitim nadzorovanjem postopka, z napami, ki pokrivajo celotno posodo in omogočajo učinkovito zbiranje onesnaževal zraka.	1–5		
Soederbergova posoda z navpičnimi kontaktnimi elementi in sistemi za zbiranje odpadnih plinov.	> 10	Prilagoditev Soederbergove tehnologije z zaprtjem in s spremenjeno točko polnjenja: 10.000–50.000 USD/peč	Pri polnjenju, drobljenju skorje in dviganju železnih kontaktnih elementov na višji položaj se pojavljajo razpršene emisije.
Tehnologija Sumitomo (anodni briketi za postopek VSS).		Srednji–visoki	
Čiščenje plinov:			
– elektrofiltri za katran;	2–5	Nizki	Visoka stopnja iskrenja in obločnih prebojev;
– kombinacija klasičnih elektrofiltrov za katran z elektrostatičnim mokrim plinskim čiščenjem; – naknadno toplotno sežiganje.	> 1	Srednji	Pri mokrem plinskem čiščenju nastaja odpadna voda.
Uporaba smole z višjim tališčem (HSS + VSS).	Visoka	Srednji Nizki–srednji	
Suho čiščenje v obstoječih napravah HSS + VSS.		Srednji–visoki	

[a/] Preostale emisije v primerjavi s stanjem, ko ni ukrepov za zmanjšanje.

D. Kurjenje v gospodinjstvih

67. Emisije PAH iz kurišč v gospodinjstvih je mogoče zaslediti, kadar se v pečeh oziroma štedilnikih ali v odprtih ognjiščih kuri les ali premog. Gospodinjstva so lahko pomemben vir emisij PAH. To je posledica uporabe trdnih goriv v ognjišč in malih kurilnih napravah v gospodinjstvih. V nekaterih državah je običajno gorivo za peči in štedilnike premog. Zaradi višje temperature zgorevanja in enakomernejše kakovosti goriva so emisije PAH iz peči na premog manjše kot iz peči na drva.

68. Poleg tega je mogoče učinkovito zmanjšati emisije PAH iz gospodinjstev z izboljšanjem lastnosti zgorevalnih sistemov (na primer hitrost zgorevanja). Med izboljšane lastnosti zgorevalnih sistemov sodita boljša zasnova zgorevalne komore in izboljšan dovod zraka. Na voljo je več tehnik za izboljšanje lastnosti zgorevalnih sistemov in zmanjšanje emisij. Glede na različne tehnike se stopnja emisij bistveno razlikuje. Z uporabo sodobnih kotlov na les z zbirno posodo za vodo, ki so ena od tehnik BAT, se zmanjšajo emisije za več kot 90% v primerjavi z zastarelimi kotli brez zbirne posode za vodo. Sodobni kotel ima tri prekate: kurišče za uplinjanje lesa, prekat za zgorevanje plina s keramiko ali kakšnim drugim materialom, ki omogoča temperaturo okrog 1000 °C, in konvekcijski prekat. Konvekcijski del, kjer voda absorbira toploto, mora biti dovolj dolg in učinkovit, da se temperatura plinov lahko zmanjša s 1000 °C na 250 °C ali manj. Obstaja tudi več načinov, kako nadomestiti stare in zastarele kotle, na primer z zbirnimi posodami za vodo, keramičnimi vložki in briketnimi gorilniki.

69. Z izboljšanjem hitrosti zgorevanja se zmanjšajo emisije ogljikovega monoksida (CO), skupnih ogljikovodikov (- THC) in PAH. Posledica omejitev emisij CO in THC (predpisi o tipskih atestih) so tudi majhne emisije PAH. Merjenje PAH je precej dražje kot merjenje CO, zato je gospodarneje določiti mejne vrednosti za CO in THC. Nadaljuje se delo v zvezi s predlogom za standard CEN za kotle na les in premog do 300 kW (glej preglednico 7).

Preglednica 7: Osnutek standardov CEN leta 1997

Vrsta		3	2	1	3	2	1	3	2	1
	Učinek (kW)	CO			THC			Delci		
Ročno	< 50	5000	8000	25000	150	300	2000	150/125	180/150	200/180
	50–150	2500	5000	12500	100	200	1500	150/125	180/150	200/180
	>150–300	1200	2000	12500	100	200	1500	150/125	180/150	200/180
Samo-dejno	< 50	3000	5000	15000	100	200	1750	150/ 125	180/150	200/180
	50–150	2500	4500	12500	80	150	1250	150/125	180/150	200/180
	> 150–300	1200	2000	12500	80	150	1250	150/125	180/150	200/180

Opomba: Stopnje emisij v mg/m^3 pri 10% O_2.

70. Emisije iz peči in štedilnikov na les v gospodinjstvih je mogoče zmanjšati:

(a) za obstoječe peči in štedilnike z obveščanjem javnosti in s programi ozaveščanja o pravilni uporabi peči in štedilnikov, uporabi izključno neobdelanega lesa, postopkih priprave in pravilnega sušenja lesa, da bi se zmanjšala njegova vlažnost, in

(b) za nove peči in štedilnike z uporabo standardov za izdelke, navedenih v osnutku standarda CEN (in ustreznih standardov za izdelke v ZDA in Kanadi).

71. Obstajajo splošnejši ukrepi za zmanjšanje emisij PAH, in sicer razvoj centraliziranih sistemov za gospodinjstva in ukrepi varčevanja z energijo, na primer boljša toplotna izolacija.

72. Možni ukrepi so navedeni v preglednici 8.

Preglednica 8: Nadzor nad emisijami PAH iz kurišč v gospodinjstvih

Ukrep	Stopnja emisij (%) [a/]	Ocena stroškov	Težave/ugotovitve
Uporaba suhega premoga in lesa (suh je tisti les, ki je bil skladiščen najmanj 18 do 24 mesecev).	Visoka učinkovitost		
Uporaba suhega premoga.	Visoka učinkovitost		
Zasnova ogrevalnih sistemov na trdna goriva, ki bi zagotovila čim boljše razmere za popolno zgorevanje: – uplinjevalni prekat; – zgorevalna komora s keramično oblogo; – učinkovit konvekcijski prekat.	55	Srednji	Treba se bo pogajati s proizvajalci, da bodo uvedli sistem atestov za peči in štedilnike.

Ukrep	Stopnja emisij (%) [a/]	Ocena stroškov	Težave/ugotovitve
Zbirna posoda za vodo. **Tehnična navodila za učinkovito uporabo.** **Programi obveščanja javnosti o uporabi peči na drva.**	30–40	Nizki	To je mogoče doseči tudi z dejavnim obveščanjem javnosti ter s praktičnimi navodili in predpisi o tipih peči in štedilnikov

[a/] Preostale emisije v primerjavi s stanjem, ko ni ukrepov za zmanjšanje.

E. Obrati za zaščito lesa

73. Zaščita lesa z derivati premogovega katrana, ki vsebujejo PAH, je lahko pomemben vir emisij PAH v zrak. Do emisij lahko pride med samim postopkom impregniranja, pa tudi med skladiščenjem, prestavljanjem in uporabo impregniranega lesa na prostem.

74. Katranska derivata z najširšo uporabo, ki vsebujeta PAH, sta karbolinej in kreozot. Oba sta destilata premogovega katrana, vsebujeta PAH in sta namenjena zaščiti žaganega lesa pred biološkimi škodljivci.

75. Emisije PAH iz obratov za zaščito lesa in prostorov za skladiščenje je mogoče zmanjšati z uporabo različnih pristopov, uporabljenih bodisi posamezno bodisi skupaj, kot so:

(a) zahteve glede skladiščenja, da bi se preprečilo onesnaževanje prsti in površinske vode z izluženimi PAH in onesnaženo meteorno vodo (na primer skladiščni prostori, zavarovani pred dežjem, nadstreški, ponovna uporaba onesnažene vode v postopku impregniranja, zahteve glede kakovosti izdelkov);

(b) ukrepi za zmanjšanje emisij v ozračje iz obratov za impregniranje (na primer preden se les odpelje v skladišče, ga je treba ohladiti z 90 °C vsaj na 30 °C. Kot tehniko BAT je treba omeniti nadomestno možnost uporabe tlaka vodne pare v podtlačnih razmerah za impregniranje lesa s kreozotom);

(c) za tehniko BAT je mogoče imeti čim ustreznejši nanos zaščitnega sredstva, s katerim se les ustrezno zaščiti in situ, s čimer se zmanjša potreba po zamenjavi, s tem pa tudi zmanjšujejo emisije iz obratov za zaščito lesa;

(d) uporaba izdelkov za zaščito lesa z manjšo vsebnostjo tistih PAH, ki so obstojna organska onesnaževala:

– po možnosti se uporablja modificirani kreozot, ki naj bi bil frakcija z vreliščem med 270 °C in 355 °C, s čimer se zmanjšajo emisije bolj hlapnih PAH in težjih, bolj strupenih PAH;

– odsvetovanje uporabe karbolineja bi prav tako omogočilo zmanjševanje emisij PAH;

(e) presoja in ustrezna uporaba nadomestnih možnosti, na primer tistih, navedenih v preglednici 9, s katerimi se na najmanjšo mero zmanjša uporaba izdelkov, ki vsebujejo PAH.

76. Pri gorenju impregniranega lesa nastajajo emisije PAH in drugih škodljivih snovi. Če se tak les že sežiga, bi moralo gorenje potekati v napravi, ustrezno opremljeni za zmanjševanje emisij.

Preglednica 9: Nadomestne možnosti za zaščitna sredstva, ki vsebujejo PAH

Ukrep	Težave/ugotovitve
Uporaba nadomestnih materialov v gradbeništvu: – izdelki iz trdega lesa, izdelani po načelih trajnostnega razvoja (utrjevanje obrežij, ograje, vrata); – plastika (v hortikulturi); – beton (železniški pragovi); – zamenjava umetnih konstrukcij z naravnimi (kot so utrjevanje obrežij, ograje itn.); – uporaba nezaščitenega lesa. Razvija se več nadomestnih načinov za zaščito lesa, pri katerih se ne uporabljajo sredstva, ki vsebujejo PAH.	Treba je proučiti tudi druga okoljska vprašanja, npr: – razpoložljivost ustreznih izdelkov iz lesa; – emisije, ki so posledica proizvodnje in odlaganja plastike, zlasti PVC.

PRILOGA VI

ROK ZA ZAČETEK UPORABE MEJNIH VREDNOSTI IN NAJBOLJŠIH RAZPOLOŽLJIVIH TEHNIK V NOVIH IN OBSTOJEČIH NEPREMIČNIH VIRIH

Rok za začetek uporabe mejnih vrednosti in najboljših razpoložljivih tehnik je:
(a) za nove nepremične vire: dve leti po začetku veljavnosti tega protokola;
(b) za obstoječe nepremične vire: osem let po začetku veljavnosti tega protokola. Po potrebi je možno podaljšanje za posamezne obstoječe nepremične vire v skladu z amortizacijsko dobo, ki jo določa notranja zakonodaja.

PRILOGA VII

PRIPOROČENI UKREPI ZA ZMANJŠEVANJE EMISIJ OBSTOJNIH ORGANSKIH ONESNAŽEVAL IZ PREMIČNIH VIROV

1. Ustrezne opredelitve so navedene v prilogi III k temu protokolu.

I. DOSEGLJIVE RAVNI EMISIJE ZA NOVA VOZILA IN PARAMETRI ZA SPREMLJANJE LASTNOSTI GORIVA

A. Dosegljive ravni emisije za nova vozila

2. Osebni avtomobili z dizelskim motorjem

Leto	Referenčna masa	Mejne vrednosti	
		Masa ogljikovodikov in NO_x	Masa trdnih delcev
1. 1. 2000	celotna	0,56 g/km	0,05 g/km
1. 1. 2005(okvirno)	celotna	0,3 g/km	0,025 g/km

3. Težka tovorna vozila

Leto/preizkusni ciklus	Mejne vrednosti	
	Masa ogljikovodikov	Masa trdnih delcev
1. 1. 2000/ ciklus ESC	0,66 g/kWh	0,1 g/kWh
1. 1. 2000/ ciklus ETC	0,85 g/kWh	0,16 g/kWh

4. Motorji v delovnih strojih

Prvi korak (sklic: uredba ECE št. 96) */

Neto moč (P) (kW)	Masa ogljikovodikov	Masa trdnih delcev
$P \geq 130$	1,3 g/kWh	0,54 g/kWh
$75 \leq P < 130$	1,3 g/kWh	0,70 g/kWh
$37 \leq P < 75$	1,3 g/kWh	0,85 g/kWh

*/ »Enotne določbe, ki se nanašajo na odobritev za namestitev motorjev s kompresijskim vžigom (C. I.) v kmetijske in gozdne traktorje v zvezi z emisijami onesnaževal iz motorja« – uredba je začela veljati 15. decembra 1995, njene sprememba pa 5. marca 1997.

Drugi korak

Neto moč (P) (kW)	Masa ogljikovodikov	Masa trdnih delcev
$0 \leq P < 18$		
$18 \leq P < 37$	1,5 g/kWh	0,8 g/kWh
$37 \leq P < 75$	1,3 g/kWh	0,4 g/kWh
$75 \leq P < 130$	1,0 g/kWh	0,3 g/kWh
$130 \leq P < 560$	1,0 g/kWh	0,2 g/kWh

B. Parametri za spremljanje lastnosti goriva

5. Dizelsko gorivo

Parameter	Enota	Meje		Preizkusna metoda
		Najnižja vrednost (2000/2005) */	Najvišja vrednost 2000/2005) */	
cetansko število		51/n. d.	-	ISO 5165
gostota pri 15 °C	kg/m^3	-	845/n. d.	ISO 3675
izhlapevanje 95%	°C	-	360/n. d.	ISO 3405
PAH	masni%	-	11/n. d.	prIP 391
žveplo	ppm	-	350/50 **/	ISO 14956

N. D.: ni določeno.
*/ 1. januar navedenega leta.
**/ Okvirna vrednost.

II.OMEJITEV HALOGENIRANIH DODATKOV V GORIVIH IN MAZIVIH

6. V nekaterih državah se uporablja 1,2-dibromometan v kombinaciji z 1,2-diklorometanom kot dodatek v osvinčenem bencinu. Poleg tega med zgorevanjem v motorju nastajajo PCDD/F. Za uporabo tristeznih avtomobilskih katalizatorjev bo potrebno neosvinčeno gorivo. Če je to mogoče, se je treba izogibati dodajanju dodatkov in drugih halogeniranih spojin bencinu in drugim gorivom ter mazivom.

7. Preglednica 1 vsebuje kratek prikaz ukrepov za nadzor nad emisijami PCDD/F v izpuhu cestnih motornih vozil.

Preglednica 1: Nadzor nad emisijami PCDD/F v izpuhu cestnih motornih vozil

Ukrepi	Težave/ugotovitve
Izogibati se je treba dodajanju halogeniranih spojin gorivom, na primer: – 1,2-diklorometan – 1,2-diklorometan in odgovarjajoče bromove spojine kot dodatki v osvinčenih gorivih za bencinske motorje (bromove spojine lahko povzročijo nastanek bromiranih dioksinov ali furanov). Izogibati se je treba halogeniranim dodatkom v gorivih in mazivih.	Proizvodnja halogeniranih dodatkov bo postopoma opuščena, ker se trg za osvinčeni bencin zmanjšuje zaradi naraščajoče uporabe tristeznih katalizatorjev v povezavi z zaprto povratno regulacijsko zanko v bencinskih motorjih.

III. UKREPI ZA ZMANJŠANJE EMISIJ OBSTOJNIH ORGANSKIH ONESNAŽEVAL (POP) IZ PREMIČNIH VIROV

A. Emisije POP iz motornih vozil

8. Emisije POP iz motornih vozil se pojavljajo kot na delce vezani PAH, ki jih oddajajo vozila z dizelskim motorjem. PAH v manjšem obsegu oddajajo tudi vozila z bencinskim motorjem.

9. Zaradi dodatkov ali proizvodnega postopka lahko mazivno olje in goriva vsebujejo halogenirane spojine. Te spojine se lahko med zgorevanjem pretvorijo v PCDD/F in se pozneje izločijo z izpušnimi plini.

B. Pregled in vzdrževanje

10. Pri premičnih virih z dizelskim motorjem se lahko učinkovitost nadzora nad emisijami PAH zagotovi s programi za občasen nadzor nad emisijami trdnih delcev, merjenjem motnosti pri pospeševanju v prostem teku ali enakovrednimi postopki.

11. Pri premičnih virih z bencinskim motorjem se lahko učinkovitost nadzora nad emisijami PAH (poleg drugih sestavin izpuha) zagotovi s programi za občasno merjenje porabe goriva in učinkovitosti katalizatorjev.

C. Načini nadzora nad emisijami PAH iz motornih vozil z dizelskim ali bencinskim motorjem

1. Splošno o nadzoru

12. Pomembno je zagotoviti, da so vozila zasnovana tako, da med uporabo izpolnjujejo standarde za emisije. To je mogoče zagotoviti z ustrezno proizvodnjo, obstojnostjo v celotnem življenjskem obdobju, jamstvom za sestavne dele, ki zmanjšujejo emisije, in izločitvijo neustreznih vozil. Stalen nadzor nad emisijami se za vozila v uporabi zagotovi z učinkovitim programom pregledov in vzdrževanja.

2. Tehnični ukrepi za nadzor nad emisijami

13. Pomembni so naslednji ukrepi za nadzor nad emisijami PAH:

(a) opredelitev kakovosti goriva in spremembe zasnove motorjev zaradi zmanjšanja emisij, preden nastanejo (primarni ukrepi), in

(b) namestitev sistemov za čiščenje izpušnih plinov, na primer oksidacijskih katalizatorjev ali lovilnikov trdnih delcev (sekundarni ukrepi).

(a) Dizelski motorji

14. Sprememba dizelskega goriva ima lahko dve prednosti: manjša vsebnost žvepla zmanjšuje emisije delcev in povečuje učinkovitost oksidacijskih katalizatorjev, zmanjšanje di- in triaromatskih spojin pa zmanjša nastanek in emisije PAH.

15. Eden od primarnih ukrepov za zmanjšanje emisij je sprememba zasnove motorja, da se doseže popolnejše zgorevanje. Uporabljajo se raznovrstne spremembe. Na sestavo izpušnih plinov na splošno vplivajo spremembe v zasnovi zgorevalne komore in večji tlak pri vbrizgavanju goriva. Danes se pri večini dizelskih motorjev uporabljajo mehanski sistemi krmiljenja motorja. Pri novejših motorjih pa se vse pogosteje uporabljajo računalniško vodeni elektronski sistemi krmiljenja, ki omogočajo večjo prilagodljivost pri nadzoru nad emisijami. Druga možnost za nadzor nad emisijami je kombinirana tehnologija visokotlačnega polnjenja in vmesnega hlajenja. S tem sistemom se uspešno zmanjšuje NO_x ter povečujeta varčna poraba goriva in izstopna moč. Pri motorjih z veliko in majhno prostornino je možno tudi spreminjanje geometrije sesalne cevi.

16. Pri zmanjševanju emisij trdnih delcev (PM) so pomembni ukrepi v zvezi z mazivnim oljem, saj 10 do 50% trdnih delcev nastaja iz motornega olja. Poraba olja se lahko zmanjša z izboljšanjem standardov za izdelavo motorjev in izboljšanjem tesnjenja.

17. Med sekundarnimi ukrepi za zmanjševanje emisij je namestitev sistemov za čiščenje izpušnih plinov. Izkazalo se je, da je pri zmanjševanju emisij PAH pri dizelskih motorjih učinkovita uporaba oksidacijskega katalizatorja skupaj s filtrom za trdne delce. Danes se preizkuša oksidacijski lovilnik trdnih delcev. Nameščen je v izpušnem sistemu in se uporablja za zadrževanje trdnih delcev; delno obnavljanje filtra pa je mogoče z zgorevanjem zbranih trdnih delcev z električnim gretjem sistema ali kakšnim drugim načinom obnavljanja. Za učinkovito obnavljanje pasivnih lovilnikov med normalnim delovanjem pa je potreben sistem obnavljanja s sežiganjem ali uporaba dodatkov.

(b) Bencinski motorji

18. Ukrepi za zmanjševanje PAH pri bencinskih motorjih temeljijo predvsem na uporabi tristeznega katalizacijskega konverterja, ki zaradi zmanjševanja emisij ogljikovodikov vpliva tudi na količino PAH.

19. Z izboljšavami pri hladnem zagonu se na splošno zmanjšujejo organske emisije, še posebej pa emisije PAH (na primer zagonski katalizatorji, izboljšanje uplinjanja/razprševanja goriva, ogrevani katalizatorji).

20. V preglednici 2 so prikazani ukrepi za zmanjšanje emisij PAH v izpuhu cestnih motornih vozil.

Preglednica 2: Zmanjšanje emisij PAH v izpuhu cestnih motornih vozil

Ukrepi	Stopnja emisij (%)	Težave/ugotovitve
Bencinski motorji:		
– tristezni katalizacijski konverter,	10–20	Razpoložljivost neosvinčenega bencina.
–katalizatorji za manjševanje emisij pri hladnem zagonu.	5–15	V prodaji v nekaterih državah
Gorivo za bencinske motorje:		Zmogljivost rafinerij.
– zmanjšanje vsebnosti aromatskih spojin,		
– zmanjšanje vsebnosti žvepla.		
Dizelski motorji:		
– oksidacijski katalizator,	20–70	
– oksidacijski lovilnik trdnih delcev/filter za trdne delce.		
Sprememba dizelskega goriva:		Zmogljivost rafinerij.
– zmanjšanje vsebnosti žvepla, da bi se zmanjšale emisije trdnih delcev.		
Izboljšanje zasnove dizelskih motorjev:		Tehnologije obstajajo.
– elektronski sistem krmiljenja, nastavitev hitrosti vbrizgavanja goriva in vbrizgavanje goriva pod visokim tlakom,		
– visokotlačno polnjenje in vmesno hlajenje,		
– vračanje izpušnih plinov.		

PRILOGA VIII

KATEGORIJE VEČJIH NEPREMIČNIH VIROV

I. UVOD

V tem seznamu niso navedeni obrati ali deli obratov za raziskave, razvoj in preizkušanje novih izdelkov. Te kategorije so podrobneje opisane v prilogi V.

II. SEZNAM KATEGORIJ

Kategorija	Opis kategorije
1	Sežig, vključno s sosežigom komunalnih, nevarnih ali medicinskih odpadkov ali usedlin odplak.
2	Obrati za sintranje.
3	Primarna in sekundarna proizvodnja bakra.
4	Proizvodnja jekla.
5	Talilnice v sekundarni industriji aluminija.
6	Zgorevanje fosilnih goriv v elektrarnah in toplarnah ter v industrijskih kotlovnicah s toplotno močjo nad 50 MW_t.
7	Mala kurišča.
8	Zgorevalne naprave s toplotno močjo pod 50 MW_t.
9	Proizvodnja koksa.
10	Proizvodnja anod.
11	Proizvodnja aluminija z uporabo Soederbergovega postopka.
12	Obrati za zaščito lesa, razen za pogodbenice, pri katerih ta kategorija ne prispeva pomembneje k njihovim skupnim emisijam PAH (kot je navedeno v prilogi III).

3. člen

Za izvajanje protokola skrbita Ministrstvo za okolje in prostor in Ministrstvo za zdravje.

4. člen

Ta zakon začne veljati petnajsti dan po objavi v Uradnem listu Republike Slovenije – Mednarodne pogodbe.

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