

**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals**

**Sub-Committee of Experts on the Globally Harmonized
System of Classification and Labelling of Chemicals**

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Item 4 (c) of the provisional agenda

Implementation of the GHS:

Cooperation with other bodies or international organizations

**Report of the second meeting of the Expert Working Group
on the review of Annexes (Buenos Aires, Argentina, 10-13
December 2018)**

**Transmitted by Secretariat of the Basel, Rotterdam, and Stockholm
Conventions**



Expert Working Group on the review of Annexes
Second meeting
Buenos Aires, 10–13 December 2018

Report of the second meeting of the Expert Working Group on the review of Annexes (Buenos Aires, Argentina, 10–13 December 2018)¹

I. Opening of the meeting

1. The second meeting of the Expert Working Group on the review of Annexes (hereinafter “EWG”) was held from 10 to 13 December 2018 in Buenos Aires, Argentina. The meeting was opened by the co-chairs of the EWG, Mr. Joost Meijer (Chile) and Ms. Magda Gosk (Poland) at 9 a.m., who expressed appreciation to the Government of Argentina for hosting the meeting with the support of the Basel Convention regional Centre for the South American region in Argentina (BCRC-Argentina), and to the European Union whose generous financial support had enabled the meeting to be organized. Welcoming remarks were delivered by Mr. Thierry Decoud, Secretary, Secretariat of Environmental Control and Monitoring, Ministry of Environmental and Sustainable Development of Argentina, and Mr. Daniel Lupi, member of the Board, National Industrial Technology Institute (INTI), Argentina.

2. The meeting was attended by the following members of the EWG:

African States

Ms. Perine Nkosi Kasonde (Zambia), on behalf of Mr. Webby Simwayi
Mr. Abderrazak Marzouki (Tunisia)
Ms. Sharon Mogomotsi (South Africa)
Mr. Jeff Nyandibo (Liberia), on behalf of Mr. Henry Williams
Mr. Jean Claude Salama (Madagascar)

Asia and Pacific States

Mr. Manoj Kumar Gangeya (India), on behalf of Mr. Sonu Singh
Ms. Roxana Maleki (Iran, Islamic Republic of)
Mr. Mikihisa Shiratori (Japan)

Central and Eastern European States

Ms. Magda Gosk (co-chair) (Poland)
Ms. Irma Gurguliani (Georgia)
Mr. Betim Lamallari (Former Yugoslav Republic of Macedonia), on behalf of Ms. Aylin Isaki Muharemi
Ms. Lina Patarchanova (Bulgaria)

¹ This document includes corrections to the report initially issued on 27 February 2019. These corrections concern paragraphs 36, 56 and 57 of the report, and the annex to the report, in particular the description of operations D20, D21, R10 and R17. This document has not been formally edited.

Latin American and Caribbean States

Ms. Alejandra Acosta (Argentina)
 Ms. Andrea Lopey Arias (Colombia)
 Mr. Joost Meijer (co-chair) (Chile)
 Mr. Eddy Pazmino (Ecuador)
 Mr. Gilberto Werneck de Capistrano Filho (Brazil)

Western European and other States

Mr. Khokan Bagchi (Australia)
 Ms. Isabelle Baudin (Switzerland)
 Ms. Julie Croteau (Canada)
 Mr. Michael Ernst (Germany), on behalf of Ms. Anja Meutsch
 Mr. Peter Wessman (European Union)

3. The following countries and organizations were represented at the meeting as observers: Argentina, Canada, Japan, Switzerland, United States of America, BCRC-Argentina, Basel Action Network, Bureau of International Recycling, Digitaleurope, Information Technology Industry Council, Institute of Scrap Recycling Industries, and Sims Recycling Solutions. A representative of the European Union for the Responsible Incineration and Treatment of Special wastes (EURITS) also participated as an observer on a provisional basis, pending consideration of its admission by the fourteenth meeting of the Conference of the Parties. In addition, two experts attended the session of the meeting pertaining to the review of Annex III of the Basel Convention: Ms. Judith Besignor and Ms. Estela Plane, both from INTI. The list of participants to the second meeting of the EWG is set out in document UNEP/CHW/RA_EWG.2/ INF/11.

II. Organizational matters

A. Adoption of the agenda

4. The Committee adopted the following agenda as proposed in document UNEP/CHW/RA_EWG.2/1:

1. Opening of the meeting.
2. Organizational matters:
 - (a) Adoption of the agenda;
 - (b) Organization of work.
3. Review of Annex IV and related aspects of Annex IX to the Basel Convention:
 - (a) Annex IV A operations;
 - (b) Annex IV B operations;
 - (c) Annex IX (B1110);
 - (d) Recommendations for revisions to Annex IV and Annex IX (B1110).
4. Review of Annexes I and III to the Basel Convention:
 - (a) Annex I;
 - (b) Annex III.
5. Way forward leading up to the fifteenth and sixteenth meetings of the Conference of the Parties.
6. Other matters.
7. Closure of the meeting.

B. Organization of work

5. The EWG considered the tentative schedule of the meeting proposed in document UNEP/CHW/RA_EWG.2/INF/1 and agreed to proceed along the lines proposed therein. At the invitation of co-chair Meijer, the Secretariat reminded participants of the rules applying to the conduct of the meeting, namely that members would be invited to speak first and observers second, and that proposals made by observers would be retained if supported by at least one member. She also

informed participants that, shortly before the meeting, one member had transmitted to the Secretariat and the co-chairs some comments on the meeting documents, while another member had transmitted proposals for possible consideration during the meeting. Co-chair Meijer invited those two members to communicate their comments and proposals during the meeting.

III. Review of Annex IV and related aspects of Annex IX to the Basel Convention

6. The Secretariat introduced background information on the work of the EWG since its first meeting (Geneva, 20–23 March 2018) as set out in document UNEP/CHW/RA_EWG.2/2, including information on the informal consultations of the EWG held on 14 June (by teleconference) and 6 September 2018 and on the eleventh meeting of the Open-ended Working Group (OEWG) (Geneva, 3–6 September 2018). She reminded participants that various invitations for comments had been made, as follows: an invitation by the co-chairs of the EWG for members and observers of the EWG to submit, by 28 September 2018, technical additions and proposals on how to reduce the number of proposals on the review of the Annex IV A and IV B operations; an invitation by the co-chairs of the EWG for members and observers of the EWG to provide, by 28 September 2018, views on the review of Annex I and of Annex III, using the templates prepared by the co-chairs; and an invitation by the OEWG in its decision OEWG-11/12 for Parties and others to submit to the Secretariat, by 31 October 2018, comments on the possible way forward leading up to the fifteenth and sixteenth meetings of the Conference of the Parties, as presented in appendix II to document UNEP/CHW/OEWG.11/INF/30. She also reminded participants that, in its decision OEWG-11/12, the OEWG had also, among other things, requested the EWG to prepare recommendations for revisions to Annex IV and Annex IX (B1110) for consideration by the Conference of the Parties at its fourteenth meeting, and requested the Secretariat to make the recommendations available to Parties and observers by 8 January 2019 with an invitation to comment by 15 March 2019.

7. Co-chair Meijer noted that few technical proposals had been received from the EWG on how to reduce the number of proposals on the review of the Annex IV A and IV B operations. He said the objective of the meeting was to reduce the number of proposals and, when possible, agree on text for each operation. To help frame the deliberations of the group, he presented the various types of operations and treatments that could theoretically be listed in Annex IV and compared them with the current operations listed in, as well as the proposed operations to be listed in that annex. He shared his view that there were broadly three ways forward for conducting the review of Annex IV: the first one was the addition of one new operation, namely release to the atmosphere; the second one was for the EWG to undertake a complete revision of the annex (e.g., by adding catch all operations); and the third one was to undertake an intermediate revision (e.g. editing, merging or splitting existing operations).

8. Participants exchanged general views on the review of Annex IV. In summarizing the discussions and answering questions raised, co-chair Meijer reminded participants that the EWG had already agreed during its first meeting that Annex IV would list operations irrespective of whether they were considered environmentally sound, and irrespective of whether they might be considered “interim”.

9. The co-chairs invited participants to express their views on the best approach to reduce the number of proposals on the review of the Annex IV A and IV B operations. One member suggested keeping only options supported by at least one member. The co-chairs and participant agreed to proceed on the basis of this approach.

10. One member introduced a proposal by his country and other Parties to add a general introduction for Annex IV, as set out in submission.² He explained that such a general introduction would serve the purpose of clarifying:

- (a) the two categories of operations listed in the annex, namely section A on final disposal operations and section B on recovery operations;
- (b) that the annex covers all operations regardless of their legal status and, as such, regardless of whether they are considered environmentally sound;
- (c) that the annex includes interim operations;
- (d) that the principal purpose of a treatment determines the selection of the operation.

² See documents UNEP/CHW/RA_EWG.2/INF/5 /Rev.1 and UNEP/CHW/RA_EWG.2/INF/6/Rev.1, page 7.

11. In the ensuing exchange of views, one member stated that, for his country, the term “recycling” is broader than “recovery”, while the proponent said that the glossary of terms adopted by the Conference of the Parties³ provided that “recovery” was the agreed term to encompass all disposal operations in Annex IV B. Members expressed different views on whether Annex IV should cover “all” disposal operations and on whether it should include “catch all” operations. Some members preferred not linking the environmentally sound nature of operations with their legal status. Questions were raised with respect to the proposed approach to select the operation in relation to the notification document, with some members highlighting that several operations could be listed in the document and several members expressing the view that the proponents’ pursued objective would be better addressed in a guidance document rather than in an introductory text for Annex IV. Although there was some support for a general introduction for Annex IV, there was no agreement on the text of such a general introduction. A proposal submitted by one member for his country and other Parties is reproduced in appendix II to the annex to the present report.

12. Before reviewing the operations listed in Annex IV, participants saw merit in considering the caption and introductory text for each section of the annex on the basis of the options set out in documents UNEP/CHW/RA_EWG.2/3 and UNEP/CHW/RA_EWG.2/4. Following an invitation by co-chair Gosk to express general views, one member supported by several other members said the proposal of his country and other Parties for both sections was to have a short caption followed by an introduction containing explanations. Another member said that the status quo should remain an option, while a further member said the approach for both sections should be consistent.

13. Reminding participants that only options supported by at least one member would be retained, co-chair Gosk invited members to go through all the proposed options with a view to reducing their number. Regarding the options for the caption for Annex IV B, many members raised questions about the meaning of the term “reclamation” and several members sought deletion of the reference to “direct re-use”. Regarding the options for the introductory text for Annex IV B, one member noted that the status quo only made reference to “hazardous wastes”, which required to be corrected. Moving on to the options for the caption for Annex IV A, questions were again raised on the reference to “reclamation” with one observer explaining that this term was used in her country and a member indicating that the terms listed in the caption reflected practices at the national level at the time the Convention was adopted rather than agreement on the relevance of the operations or the meaning of the terms. Based on this explanation, co-chair Gosk noted that the term “reclamation” could therefore be deleted. Regarding the options for the introductory text for Annex IV A, co-chair Gosk noted the agreement among members to delete the reference to operations “which occur in practice”. Concluding the discussions, co-chair Gosk said there was general agreement for the caption and introductory texts for each section of Annex IV to be understood as packages. She invited participants to put forward such packages by 9.00 am the next morning, using only the options supported by at least one member. Status quo was an option for both introductory texts.

14. The EWG resumed its consideration of the captions and introductory texts for sections A and B of Annex IV on the third day of the meeting, based on the packages put forward by five members and one observer. The outcome of the consideration of the packages is set out in section A of the recommended options for revisions to Annex IV, set out in appendix I to the annex to the present report. They include five options, including the status quo, for Annex IV A, and four options, including the status quo, for annex IV B.

A. Annex IV A operations

15. Participants based their review of the D operations listed in Annex IV A on documents UNEP/CHW/RA_EWG.2/3, UNEP/CHW/RA_EWG.2/INF/2, UNEP/CHW/RA_EWG.2/INF/3 and UNEP/CHW/RA_EWG.2/INF/5. One member highlighted that, as mentioned by the Secretariat at the outset of the meeting, the proposals of her country for revisions to Annex IV were not set out in the meeting documents due to their late submission. She invited participants to consider those as well. Following an exchange of views, members agreed that the proposals of the Party pertaining to operations would be considered during the meeting, but that the proposals pertaining to subcategories of operations would not. The Secretariat was requested to issue revised versions of documents UNEP/CHW/RA_EWG.2/INF/5 and UNEP/CHW/RA_EWG.2/INF/6 to include the proposals from that Party (see documents UNEP/CHW/RA_EWG.2/INF/5/Rev.1 and UNEP/CHW/RA_EWG.2/INF/6/Rev.1 made available after the meeting).

³ See

<http://www.basel.int/Implementation/LegalMatters/LegalClarity/Glossaryofterms/SmallIntersessionalWorkingGroup/tabid/3622/Default.aspx>.

16. In response to the invitation by co-chair Meijer to make general comments, one member said the EWG should be aiming at changes that will bring environmental gains. She said that too many changes to Annex IV could create loopholes or lead to a Convention that is no longer working. Another member said that the EWG should be mindful of the costs of implementation of any changes to the annex, including those resulting from the need to adapt national legislation. He said the benefit of each proposed change must be very clear. Another member concurred with him, explaining that proposals put forward by his country and other Parties, including new operations, aimed at addressing problems with Annex IV that had been identified in practice.

17. Participants then went through the various options for each operation and established a streamlined list of the options supported by at least one member. With respect to the new proposed operations, participants considered the four proposals set out in document UNEP/CHW/RA_EWG.2/3: operations related to the release of liquefied gases to the atmosphere, operations related to nanomaterials, open burning, and infectious waste treatment. With respect to the first proposed operation, members agreed to edit it to read “release to the atmosphere (e.g., venting of compressed or liquefied gases)”. Regarding the second proposed operation, one member suggested deletion given the ongoing work under the Convention on wastes containing nanomaterials, while the proponent of the operation explained that the proposal was not about wastes containing nanomaterials but about the treatment of wastes by nanomaterials. The proponent of the fourth new operation said her country proposed to replace it with a new operation entitled “treatment of sterilization or decontamination of biopathological waste” with subcategories of operations. Another member presented three new operations put forward by his country and other Parties, as set out in document UNEP/CHW/RA_EWG.2/INF/3, namely a catch all for D operations, a catch all operation for interim operations prior to D operations, and operations addressing stabilization and solidification. Members agreed to delete all references to “etc.” in the description of the operations listed Annex IV.

18. The EWG resumed its review of the operations listed in Annex IV A on the third day of the meeting on the basis of the streamlined list of options pertaining to existing operations and the proposed seven new operations.

1. Existing operations

19. With respect to D1: deposit into or onto land, (e.g., landfill, etc.), participants exchanged views on the difference between deposits “into” and “onto” land, with two members stating the difference was unclear, and another member explaining that his proposal was to limit the D1 operation to deposits “onto land” and to address deposits “into land” elsewhere. Participants also exchanged views on the proposed reference to “non-engineered” landfill, with differing views being expressed as to whether D1 operations were meant to only be environmentally sound or not, and whether this was at all relevant. In conclusion, two options were recommended for revisions to the D1 operation. Status quo was not supported by at least one member.

20. Regarding D2: land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.), members expressed different views as to whether the operation should include both in situ and ex situ operations with one member proposing that it includes both the treatment “of land” and “on land” while another considered that ex situ land treatment fell under a D8 operation reformulated as “biological treatment prior to submission to any of the operations in Section A”. Co-chair Meijer noted that, as reflected in the report on the import and export of wastes destined for final disposal and recovery operations for the years 2010, 2013 and 2016 set out in document UNEP/CHW/RA_EWG.2/INF/2, D2 operations were not used in practice. Several members however noted that the list of operations listed in Annex IV was used at the national level not only for the purpose of controlling transboundary movements of hazardous wastes and other wastes but in relation to obligations pertaining to the management of those wastes. In conclusion, two options were recommended for revisions to the D2 operation in addition to the status quo.

21. Regarding D3: deep injection, (e.g., injection of pumpable discards into wells, salt domes of naturally occurring repositories, etc.), one member presented the option put forward by his country and other Parties, explaining that the objective of the formulation “deposit into land other than that covered by D12” was to make the operation more general by capturing everything else than what was covered by D12. In conclusion, two options were recommended for revisions to the D3 operation in addition to the status quo.

22. With respect to D4: surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.), one member said his proposal was to delete the operation and merge the part of it related to placement on surface or land with operation D1. He explained that the status quo presents several challenges, namely the reference to “ponds” and “lagoons” which relates to operations D6 and D7 about releases in water, the reference to “into pits” which relates to operation

D1, and the use of the term “discards” which is unclear. Another member said D1 and D4 should be kept separate and that merging of operations considered technically distinct would likely only cause confusion. Moreover, she questioned what environmental gains could be obtained from such a merge and mentioned that her observations applied to all of the merge proposals, and not only for D4. A further member sought clarification as to whether it was the nature of the wastes that explained the difference between the D1 and D4 operations. Participants exchanged views on the kind of activities covered by “surface impoundment”. One member explained that D4 operations covered the building of a dam to retain a water body contaminated with large amounts of liquid or sludgy wastes such as those resulting from mining activities. Another member said the terminologies used for such mining activities included “tailings ponds” and “tailings dams”. In conclusion, two options were recommended for revisions to the D4 operation in addition to the status quo.

23. Regarding D5: specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.), participants considered the proposed options keeping in mind the discussions on the related D1 operation. One member said the proposal of his country and other Parties was to replace the current drafting with the term “landfilling” so as to delete the references to the unclear terms “specially” and “engineered”. He said the current work on updating the technical guidelines on specially engineered landfill would clarify what kind of landfilling is considered environmentally sound. Several members supported the status quo, while another member said her proposed option aimed at bringing further clarity to the meaning of the terms “engineered landfill” by specifying that it referred to the placement of wastes isolated from the environment with, if needed, venting systems, leachate collection and draining systems. In conclusion, two options were recommended for revisions to the D5 operation in addition to the status quo.

24. Participants considered together the review of D6: release into a water body except seas/oceans, and D7: release into seas/oceans including sea-bed insertion. One member, supported by other members, said his country and other Parties supported the status quo. Another member said her proposals for both operations, which referred to “uncontrolled” or “unregulated” releases, aimed to convey that such releases were not suitable for hazardous wastes. Several members agreed that the release of hazardous wastes into a water body would be illegal but noted that the operations listed in Annex IV were irrespective of whether they were legal or illegal. In conclusion, members agreed to only recommend the status quo for both operations.

25. Regarding D8: biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A, members exchanged views on the nature of the operation with one member understanding that it covered both interim and final disposal operations, while several others stated that D8 was an interim operation and that extending its scope to include final disposal operations meant proposing a new operation. In conclusion, two options for revisions to the D8 operation were recommended in addition to the status quo. One of the proposed option aims at clarifying the interim nature of the operation, while the other provides for splitting the operation into two, one for biological treatment as an interim operation and one for biological treatment as a final disposal operation.

26. With respect to D9: physico chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A, (e.g., evaporation, drying, calcination, neutralization, precipitation, etc.), one member said his country and other Parties saw difficulties with the status quo, including with respect to the use of the terms “discarded” and “physico-chemical” which were considered unclear, and with the term “calcination” which related to a thermal treatment. He therefore proposed a formulation that had been developed taking into account the existing technical guidelines on D8 and D9 adopted at the fifth meeting of the Conference of the Parties (6–10 December 1999) and that brought more clarity, namely “physical/mechanical treatment (e.g., evaporation, drying), physical/chemical treatment (e.g. solvent extraction) and chemical treatment (e.g., neutralization, precipitation), immobilization (stabilization, solidification) prior to submission to any of the operations in Section A”. In a discussion as to whether D8 included both interim and final operations, one member said that one operation could not combine an interim and a final disposal operation. In conclusion, two options were recommended for revisions to the D9 operation in addition to the status quo. One of the proposed options aims at simplifying and clarifying the interim nature of the operation, while the other provides for splitting the operation into two, one for physico chemical treatment as an interim operation and one for physico chemical treatment as a final disposal operation.

27. Participants briefly considered together the review of D10: incineration on land, and D11: incineration at sea. One member supported retaining the status quo for both operations. There was support for replacing the reference to “incineration on land” with “thermal treatment”. In conclusion,

two options each were recommended for revisions to the D10 and D11 operations in addition to the status quo.

28. Regarding D12: permanent storage (e.g., emplacement of containers in a mine, etc.), several members supported the status quo. One member said the proposal of his country and other Parties was based on the understanding that option 1 for the D1 operation could encompass permanent aboveground storage. Accordingly, the proposed option for D12 only covered permanent underground storage (e.g., emplacement of containers in a mine). Several members commented that this proposal diminished the scope of the original formulation of the D12 operation and should, accordingly, be understood as a proposal for a new operation to be listed in Annex IV. Members subsequently exchanged views on how to distinguish between whether a proposal was a “new operation” or an option for an existing operation. Co-chair Gosk summarized the differing views that had been expressed on the scope of the D12 operation, and said there was general understanding that the status quo covered both aboveground and underground storage. She invited members to consult further on the options. Resuming consideration of the matter on the fourth day of the meeting, two options were recommended for revisions to the D12 operation in addition to the status quo. One of the proposed options aims at limiting the scope of the operation to permanent underground storage, bearing in mind that one of the recommended options for a revised D1 operation could encompass permanent aboveground storage, while the other provides for splitting the operation into two, one for permanent underground storage and one for permanent aboveground storage.

29. With respect to D13: blending or mixing prior to submission to any of the operations in Section A, several members supported the status quo, saying that the proposed option “mechanical treatment (e.g. dismantling, sorting, crushing, compacting, pelletizing, shredding, conditioning, repackaging, separating, blending, mixing) prior to submission to any of the operations in section A” amounted to a new operation. The proponent of that option, which was made on behalf of several Parties and supported by another member, explained that the option was expanding the existing D13 operation, noting however that the addition of “repackaging” integrated D14 in D13. Members exchanged views on the respective scope of the existing and proposed new formulation of the D13 operation, and how the examples of mechanical treatment related or not to blending and mixing. One member said that any proposal that had an impact on the scope of an existing operation, and hence on the scope of the Convention, should be considered a proposal for a new disposal operation. She sought an explanation from the proponent on the proposal and its rationale, including its anticipated environmental gains. Co-chair Gosk reminded participants that, based on the report of the first meeting of the EWG, “new operations” were operations not having any relation to an existing operation. Participants agreed to follow this approach going forward and to identify the options for existing operations that have an impact on the scope of the Convention. In conclusion, three options were recommended for revisions to the D13 operation in addition to the status quo.

30. Regarding D14: repackaging prior to submission to any of the operations in Section A, several members supported deletion or merging with the D13 or D15 operations. Another member supported status quo. Two options were recommended for revisions to the D14 operation in addition to the status quo.

31. With respect to D15: storage pending any of the operations in Section A, one member said the option his country and other Parties proposed was to add the term “temporary” to clarify that the operation does not cover permanent storage, and that national legislation would define what was meant by that term, while another member said that either the operation should be deleted, or the limitation in time should be specified in Annex IV. Members agreed to not recommend status quo. Two options were recommended for revisions to the D15 operation

2. Proposed new operations

32. Members undertook a second review of the proposed seven new operations. General support was expressed for the new operation D16: release to the atmosphere (e.g., venting of compressed or liquefied gases)”.

33. Regarding the new operation D17: treatment of waste by nanomaterials, one member sought more information from the proponent. Further information is to be transmitted by the proponent of the proposal to the EWG through the Secretariat.

34. With respect to the new operation D18: open burning, one member sought clarification as to its relationship with operations D10 and D11 given that open burning was one form of incineration. Another member said the proposal duplicated operation D10. A further member said she did not see a link to operation D10 and that the current draft for updating of the technical guidelines on D10 did not provide that this operation encompassed open burning. The proponent of the new operation explained

that its objective was to facilitate the control of transboundary movements of wastes going for open burning, which was a non-environmentally sound operation while operation D10 would be intended to be environmentally sound. Further information is to be transmitted by the proponent of the proposal to the EWG through the Secretariat.

35. Regarding the new operation D19: treatment of sterilization or decontamination of biopathological waste, one member asked whether the proposal could be included in a more general operation on chemical treatment or biological treatment. Another member noted that the proposal was specific to a waste stream and said that the operation had similarities with some of the subcategories of operation proposed by the same member for operation D9.

36. Regarding the new operation D20: final disposal operations other than covered by D1 option1, D2 option1, D3 option1, D5 option1, D6, D7, D10 option 1, D12 option 1 and D16, the proponent explained that it was intended to be a catch all for D operations except for the interim D operations. One member sought clarification as to whether the intention was for national legislation to determine the operations encompassed by the catch all and therefore the scope of the Basel Convention, while an observer expressed concern that an individual Party would have the possibility to determine that any given operation, for instance an operation leading to direct reuse, could be a final disposal operation. The proponent clarified that the operations encompassed by the catch all operation had to be understood with the introductory text to Annex IV A which defined what a final disposal operation was, namely an operation which is not a recovery operation even where the operation has as a secondary consequence the reclamation of substances or energy. Answering a question from another member, the proponent confirmed that the intention was to cover both operations that currently exist and operations that may come in practice in the future, for instance disposal operations involving nanotechnologies. One observer expressed concern that a catch all operation might be misused by notifiers and that information on the specificity of the operations would be lost. One member sought more information from the proponent on examples of operations that were not already encompassed by the options and new proposals under consideration. One member questioned if the Committee administering the Mechanism for Promoting Implementation and Compliance should be consulted on such a proposal. Another member sought an explanation from the proponent on the proposal and its rationale and expressed concerns over its operational implications. Further information is to be transmitted by the proponent of the proposal to the EWG through the Secretariat

37. With respect to the new operation D21: other treatment than covered by D8 option1, D9 option1 and D13 option 1 prior to the submission to any of the operations in section A, the proponent explained that it was intended to be a catch all for interim operations prior to a final disposal operation. He said that, as an example, thermal pre-treatment could be covered by the catch all. One member expressed preference for clarity on the operations listed in Annex IV and sought more information from the proponent on examples of interim operations that were not already encompassed by the options and new proposals under consideration. Another member sought an explanation from the proponent on the proposal and its rationale. Supporting a comment from an observer, she said that the term "treatment" was not defined in the Convention or in the glossary of terms, and that it was preferable for Annex IV to only use the terms "operation" and "operations prior to" another operation. Further information is to be transmitted by the proponent of the proposal to the EWG through the Secretariat.

38. Regarding the new operation D22: operations addressing stabilization and solidification, the proponent said it could either be included in D9 (as is the case in D9 option 1) or as a new operation. One member explained that, from her point of view, operations addressing stabilization and solidification were already encompassed by operation D9 but she expressed openness with singling them out in a new operation if there was an environmental gain in doing so. Following a query from a member about whether the operation D22 was an interim operation, two options were recommended for the operation.

B. Annex IV B operations

39. Participants based their review of the R operations listed in Annex IV B on documents UNEP/CHW/RA_EWG.2/4, UNEP/CHW/RA_EWG.2/INF/2, UNEP/CHW/RA_EWG.2/INF/4 and UNEP/CHW/RA_EWG.2/INF/6. They proceeded in a similar manner as with their review of Annex IV A, namely with an initial review of each option with a view to reducing their number by only retaining those options supported by at least one member, followed by a first discussion of the proposed new operations.

40. Following the establishment of a streamlined list of options for R operations supported by at least one member, participants turned their attention to the five proposals for new operations set out in document UNEP/CHW/RA_EWG.2/4: preparing for re-use (e.g. checking, cleaning, repair,

refurbishment), co-processing, mechanical operations or mechanical treatment, reflect interim operations - biological treatment and physico chemical treatment, and catch all operations. One member said the fourth proposal should be replaced with two proposals, namely: biological treatment prior to submission to any of the operations in section B, and physical/mechanical treatment (e.g., evaporation, drying), physical/chemical treatment (e.g., solvent extraction), chemical treatment (e.g., neutralization, precipitation) prior to submission to any of the operations in section B. He also said the fifth operation should be replaced with three operations, namely: a catch all for R operations except interim R operations, a catch all operation for interim operations prior to R operations, and a proposal for repackaging as an interim operation. Another member proposed the additional operation “physical and / or chemical treatment not specified elsewhere in this annex”.

41. The EWG resumed its review of the operations listed in Annex IV B on the third day of the meeting on the basis of the streamlined list of options pertaining to existing operations and the proposed nine new operations.

1. Existing operations

42. Regarding operations R1: use as a fuel (other than in direct incineration) or other means to generate energy, R2: solvent reclamation/regeneration, participants agreed to retain the streamlined list of options under consideration and to recommend, for each operation, two options for revision in addition to the status quo. Regarding operations R3: recycling/reclamation of organic substances which are not used as solvents, and R4: recycling/reclamation of metals and metal compounds, some members questioned the use of the term “reclamation” for operations R3 and R4. Participants agreed to retain the streamlined list of options under consideration and to recommend, for each operation, two options for revision in addition to the status quo.

43. With respect to R5: recycling/reclamation of other inorganic materials, one member asked why the options aimed at deleting the term “reclamation” to which the proponent of one of the options answered that it was because the term was not defined in the glossary of terms. Commenting on the option “recovery of other inorganic materials”, one member stated that since the term “recovery” was the generic term to cover all operations listed in Annex IV B, the operation should be formulated otherwise than using the term “recovery”. In conclusion, two options were recommended for revisions to the R5 operation in addition to the status quo.

44. Regarding R6: regeneration of acids or bases, one member indicated her support for the status quo and questioned the rationale behind the proposal to merge R6 with other operations. She indicated that the amount of waste subject to R6 is substantial and that merging it with other operations could be confusing. In conclusion, two options were recommended for revisions to the R6 operation in addition to the status quo.

45. Regarding R7: recovery of components used for pollution abatement, one member asked for the rationale behind the option “delete R7 and merge with R3-R5”. She expressed concern that the proposal would lead to establishing a very broad category of operations that would complicate implementation. She wondered what environmental gain would result from the proposal. The proponent explained that the objective of the proposal was to achieve greater legal clarity by simplifying the list of operations in Annex IV B and by harmonizing the use of the terms “recycling” and “recovery” in Annex IV with that agreed in the glossary of terms. He also said the proposal aimed at avoiding listing waste stream-specific operations. One member suggested that the views of the Implementation and Compliance Committee be sought as to whether the proposal would promote compliance with the Convention. Another member said that the outcome of the review of Annex IV should not lead to a limitation of the scope of the Convention or to complicating its implementation. In conclusion, three options were recommended for revisions to the R7 operation in addition to the status quo.

46. Regarding R8: recovery of components from catalysts, one member reiterated her concerns with the broad category of operations that would result from the option of deleting the operation and merging it with operations R3-R5. In conclusion, four options were recommended for revisions to the R8 operation in addition to the status quo.

47. Regarding R9: used oil re-refining or other reuses of previously used oil, one member said that the option “refining of used oils and other reusable fluids” would expand the scope of the operation to “other usable fluids”. She sought clarification from the proponents of options about any problem they had faced with the status quo. One member explained that one issue with the current formulation of the operation was linked to the glossary of terms. He said the reference to “other reuses” in the formulation of the operation conflicted with the understanding of the terms in the glossary, that oil could be cleaned without re-refining it, and that the activities encompassed by the operation could fall

under “preparing for reuse”. He also expressed doubts about the value of retaining waste stream specific operations. Another member supported the deletion of the terms “other reuses” given its unclarity and suggested instead a reference to “reusable fluids”. On the proposal to delete R9 and merge it with R3, several members indicated support for retaining the operation as a standalone operation for the specific waste stream concerned. Another member explained that, as re-refining of used oils was an important industry in his country, he supported the status quo or alternatively the option “re-refining of used oil”. Commenting on the statement that a reference to “other fluids” enabled extending the operation to fluids other than oil that could be regenerated, one member explained her country used R9 for purposes other than regeneration. In conclusion, four options were recommended for revisions to the R9 operation in addition to the status quo.

48. Regarding R10: land treatment resulting in benefit to agriculture or ecological improvement, participants exchanged information on their understanding of the operation and its use in practice. Issues discussed included whether the operation referred to treatment of land, treatment on land, or treatment by land, and whether it encompassed composting and soil improvement. They also exchanged views on the need to clarify the terms “land treatment” for instance by specifying that it could mean the application of sludge or compost onto land, as well as the terms “other ecological improvement” for instance by replacing it with the terms “or replacing other beneficial materials (e.g. daily cover material on landfills)”. In conclusion, four options were recommended for revisions to the R10 operation in addition to the status quo.

49. Regarding R11: uses of residual materials obtained from any of the operations numbered R1-R10, one member referred to issues with the term “use” which does not refer to a disposal operation. He said the proposal of his country and other Parties was to delete the operation. One member indicated that this operation could be for the use of ashes as a road construction material. Concluding the discussion, one option was recommended for revisions to the R11 operation, namely deletion, in addition to the status quo.

50. Regarding R12: exchange of wastes for submission to any of the operations numbered R1-R11, one member said issues with the current formulation of R12 mirrored those raised under D13 and, with another member, proposed that the same approach be followed. He explained that his country’s proposal and that of other Parties was to split the operation into three interim operations which would encompass: biological treatment; physical/mechanical treatment, physical/chemical treatment and chemical treatment; and mechanical treatment. These interim operations would be complemented by the addition of a catch all for interim operations prior to a recovery operation. He added that “exchange of waste” was unclear terminology that could cover all kinds of interim operations, while other members said that it referred to a distinct type of operation. Another member proposed deletion of the operation and merging with its proposed new R operation “physical, mechanical and / or chemical treatment”. Supporting a comment from several observers, one member sought replacing the term “treatment” with “operation”. Another member said the proposals read better with the use of the term “treatment”, while a further member said that, at this point in time, he did not support replacing the term as suggested. Co-chair Gosk noted that further discussions on the use of term “treatment” was warranted. Concluding their discussions, four options were recommended for revisions to the R12 operation in addition to the status quo.

51. Regarding R13: accumulation of material intended for any operation in Section B, one member said the option proposed by his country and other Parties was consistent with that made with respect to D15 with the addition of the term “temporary” to clarify that the operation was not permanent. He also expressed the view that the term “accumulation” in the status quo was unclear. In the absence of support by a member for the status quo, co-chair Gosk concluded that it would not be an option recommended by the EWG. In conclusion, two options were recommended for revisions to the R13 operation.

2. Proposed new operations

52. Members undertook a second review of the proposed nine new operations. Regarding the new operation R14: preparing for reuse (e.g., checking, cleaning, repair, refurbishment), several members expressed concern that the proposal expanded the scope of the Convention and was not fully in line with the technical guidelines on transboundary movements of electrical and electronic waste and used electrical and electronic equipment, in particular regarding the distinction between waste and non waste under the Basel Convention. They queried about the environmental gain that would result from the new operation. Another member said that if an object went to repair or refurbishment, it was waste, to which the proponent answered that it was clear from the glossary of terms that repair and refurbishment were operations that could be applied to both a waste and a non-waste. He argued that the proposal did not contradict the technical guidelines that had been referred to, and explained that

the proposal contributed to waste prevention and that it was not his intention that every repair or checking would be a disposal operation. Instead, the proposal had to be read in conjunction with the proposed introduction to Annex IV B that defined what was meant by a recovery operation, namely “an operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy”. A member raised implementation and enforcement challenges with the proposal due to the difficulty of determining whether a transboundary movement fell under the Convention in the event a substance or object went for “repair”. Several other members supported the proposal explaining that it was important for their country to retain operations leading to “direct reuse” or “reuse” to be able to control transboundary movements of, for example, used tires or lead acid batteries. Concluding the discussions, several members reiterated their wish to have more information from the proponent on whether the proposal would expand the scope of the Convention, what environmental gains it would have and how to ensure it was compatible with the e-waste technical guidelines. Further information is to be transmitted by the proponent of the proposal to the EWG through the Secretariat

53. Regarding the new operation R15: co processing, one member supported the idea behind the proposal and said that, as it was one form of thermal treatment whose main purpose was energy recovery, it was already encompassed by the R1 operation. The proponent expressed the view that as the main purpose of co-processing was not necessarily energy recovery, it should be listed as a standalone operation.

54. Regarding the new operations: mechanical operations or mechanical treatment; biological treatment prior to submission to any of the operations in section B; and physical/mechanical treatment (e.g., evaporation, drying), physical/chemical treatment (e.g., solvent extraction), chemical treatment (e.g., neutralization, precipitation) prior to submission to any of the operations in section B, the proponent acknowledged that the same proposals were already listed as options for the revision of operation R12. Members therefore agreed to not recommend these proposals as standalone new proposals. One member sought more information from the proponent on the meaning of the proposal “biological treatment prior to submission to any of the operations in section B”.

55. Regarding the new operation R16: repackaging prior to submission to any of the operations in Section B, members noted that the proposal mirrored operation D14.

56. Regarding the new operation: physical and/or chemical treatment not specified elsewhere in this annex, one member sought clarification as to whether the proposal included interim operations to which the proponent answered this was yet to be seen. The proposal was listed as one of the options for revision of operation R12.

57. Regarding the new operation R17: recovery other than covered by R1 option 2, R4 option 1, R4 option 1, R5 option 1 and R14 above, the proponent explained this proposal was intended to be the catch all for R operations except for the interim R operations. One member sought more information from the proponent on examples of interim operations that were not already encompassed by the options and new proposals under consideration, on the wastes that would be covered by the operation, and on the rationale behind the proposal. The new proposal was listed as a recommended option which was reformulated as “recovery other than covered by R1 option 2, R3 option 1, R4 option 1, R5 option 1 and R14”. Further information is to be transmitted by the proponent of the proposal to the EWG through the Secretariat

58. Regarding the new operation: other treatment than covered by R12, R12 bis and R12 ter above prior to submission to any of the operations in section B, the proponent explained this proposal was intended to be the catch all for interim operations prior to R operations and the proposal was listed within the options for revision of operation R12.

C. Annex IX (B1110)

59. Participants based their review of Annex IX (B1110) to the Basel Convention on the background information set out in document UNEP/CHW/RA_EWG.2/2 and on document UNEP/CHW/RA_EWG.2/5 which, as no further intersessional work had been mandated following the first meeting of the EWG regarding the review of Annex IX (B1110), reflected the outcome of that meeting.

60. Co-chair Meijer reminded members that, in its decision OEWG-11/12, the OEWG had, among other things, followed the EWG recommendation for the Conference of the Parties at its fourteenth meeting to consider including the review of entry B1110 and the review of mirror entry A1180 in the terms of reference of the EWG. Members therefore agreed to await the outcome of the fourteenth meeting of the Conference of the Parties before further considering the review of Annex IX (B1110).

D. Recommendations for revisions to Annex IV and Annex IX (B1110)

61. The EWG considered the development of its recommendations for revisions to Annex IV and Annex IX (B1110) on the basis of the outcome of its review of the captions and introductions set out in Annex IV, as well as of its review of each D and R operation and of new proposals for D and R operations. Members agreed to include in the recommendations an introductory text setting out general considerations underpinning the recommendations for revisions to Annex IV and a general recommendation regarding the revisions to Annex IX (B1110). They also agreed for the recommended options for revisions to Annex IV to include an explanatory chapeau. Members further agreed to entrust the co-chairs, with the support of the Secretariat, with finalizing the drafting of the recommendations.

62. The recommendations by the expert working group on the review of the Annexes for revisions to Annex IV and Annex IX (B1110) for consideration by the Conference of the Parties at its fourteenth meeting, to be made available to Parties and observers on 8 January 2019 with an invitation to comment by 15 March 2019, are set out in the annex to the present report.

IV. Review of Annexes I and III to the Basel Convention

A. Review of Annex I

63. The EWG initiated consideration of the review of Annex I on the afternoon of the third day of the meeting on the basis of documents UNEP/CHW/RA_EWG.2/6 and UNEP/CHW/RA_EWG.2/INF/7, with co-chair Meijer inviting participants to share general views on the matter.

64. One member said that the main text of the Basel Convention did not refer to Annexes VIII and IX and that, in her country, Annex I was the reference to determine whether a hazardous waste fell under the scope of the Convention. She proposed that the review of Annex I lead to the development of a more complete list of hazardous wastes.

65. Another member said the proposal from his country and other Parties was for a revised Annex I focusing on constituents rather than on both waste streams and constituents, as was currently the case with entries Y1 to Y18 and entries Y19 to Y45, respectively. He explained that Annexes VIII and IX would provide further elaboration on the wastes regulated by the Convention pursuant to Annexes I and III, and that they were referred to in paragraphs (a) to (d) at the end of Annex I. One member queried whether there would be thresholds to determine whether a given constituent was "hazardous", to which the proponent clarified that Annex III would still be the basis to determine whether a waste was hazardous. Another member raised concerns with the proposal to delete entries Y1 to Y18, saying that Annex VIII did not mirror some of those entries. The proponent indicated that his proposal was based on the understanding that all waste streams listed in Annex I were encompassed by the A codes of Annex VIII. He said that it was the constituents that made the wastes potentially hazardous. Another member said that each proposal for a new entry in Annex I would need to be discussed and that there should be a clear rationale for it. She questioned for instance the proposal to add cobalt as a constituent, but saw merit in exploring the proposal to list persistent organic pollutants. A further member called for maintaining the first 18 entries in Annex I in order to avoid too much of an impact on national legislation.

66. Concluding their general exchange of views on the review of Annex I, the EWG agreed to invite members and observers to provide by 31 July 2019 views on the two general issues listed in the first four slides of document UNEP/CHW/RA_EWG.2/6, namely on the structure of Annex I and on the Annex I categories.

B. Review of Annex III

67. The EWG initiated consideration of the review of Annex III on the fourth day of the meeting on the basis of documents UNEP/CHW/RA_EWG.2/7 and UNEP/CHW/RA_EWG.2/INF/8. Two experts on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Ms. Judith Bensignor and Ms. Estela Plane, participated in the session.

68. Co-chair Meijer invited participants to share general views on the matter. One member said that the proposal of his country and other Parties was to align Annex III with the GHS. He noted that the issue of the testing method to detect whether a waste displays hazardous characteristics was a general issue mentioned in two different places in document UNEP/CHW/RA_EWG.2/7 and suggested that both proposals be discussed jointly. He also said that the structure of the Annex III was another general issue to be discussed, saying that the proposal was for hazards to be listed in four

categories, namely physical hazards, human health hazards, environmental hazards, and delayed hazards.

69. Several members expressed support with efforts to align the content of Annex III with the GHS, while several other members, emphasizing the important implications at the operational level of such a potential shift away from the current use of the hazard classification system included in the United Nations Recommendations on the Transport of Dangerous Goods (UN class),⁴ said they would welcome clarity on whether both systems are compatible, in particular given that the Basel Convention is about wastes while the GHS is about substances. One of those members expressed preference with retaining the UN class and establishing a correlation between that system and the GHS. While seeing value with the threshold approach embodied in the GHS, she queried whether it could be used without transitioning to the GHS.

70. One member proposing the alignment with the GHS agreed that the process was complicated and required the involvement of experts on the matter, but that his country and other Parties had gone through a thorough process, the outcome of which was presented in the appendix to their submission made available in document UNEP/CHW/RA_EWG.2/INF/8. Answering a comment, and with the support of another member, he disagreed with the statement that using the GHS would exclude wastes from the scope of the Convention and said that, instead, it would bring more clarity and consistency to the process of determining whether a waste was hazardous and would, therefore, improve environmental protection. He also said that there would be a consequential change in case of a shift to GHS with an amendment to be made to Annex V of the Convention in relation to the UN class as well as adjustments to be made to the notification and movement documents. Answering the earlier query about the possibility to follow a threshold approach without aligning with the GHS, he reminded participants that past attempts to develop guidance on the hazardous characteristics had borne limited fruit.⁵ He expressed doubts that further attempts would be more conclusive and said that aligning with the GHS was the most straightforward way to bring legal clarity to the hazardous characteristics. Following the invitation by co-chair Meijer to provide more information on the experience in his country and other Parties, he agreed to share with the EWG the European Commission technical guidance on the classification of waste.

71. One member said her country had compared Annex III, which was developed on the basis of a regulation on the transport of dangerous goods, with the GHS and concluded that in the case of physical characteristics, it was straightforward to replace the Annex III definition with GHS, while in other cases, for instance H10 (liberation of toxic gases in contact with air or water) or H11 (toxic - delayed or chronic), it was difficult.

72. The GHS experts then made a presentation on the GHS and how it relates to Annex III. They also participated in a question and answer session at what time they clarified that: the GHS applies to infectious risks and its application to nanotechnology is still under discussion; the hazard classes and categories of the GHS and of the UN class are harmonized, with the same definitions and the same cut off concentrations, but that concentrations are not relevant to transport; that the GHS is updated every two years and that, until now, such updates have not been disruptive.

73. Concluding their general exchange of views on the review of Annex III, the EWG agreed to invite members and observers to provide by 31 July 2019 views on the four general issues listed in the first two slides of document UNEP/CHW/RA_EWG.2/7, namely, the reference to UN class, the alignment with GHS, the alignment with the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), and the level of specificity of H-characteristics, as well as on the testing methods and the structure of Annex III.

VI. Way forward leading up to the fifteenth and sixteenth meetings of the Conference of the Parties

74. The EWG considered the way forward leading up to the fifteenth and sixteenth meetings of the Conference of the Parties on the basis of documents UNEP/CHW/RA_EWG.2/2 and UNEP/CHW/RA_EWG.2/INF/9. Co-chair Gosk noted that two submissions had been received in response to the invitation, set out in decision OEWG-11/12, for Parties and others to submit to the Secretariat, by 31 October 2018, comments on the possible way forward leading up to the fifteenth and sixteenth meetings of the Conference of the Parties, as presented in appendix II to document

⁴ ST/SG/AC.10/1Rev.5.

⁵ See <http://www.basel.int/Implementation/HazardCharacteristics/Overview/tabid/3931/Default.aspx>.

UNEP/CHW/OEWG.11/INF/30. Both submissions expressed support for the proposed way forward, which the EWG took note of.

VII. Other matters

75. No other matters were considered.

VIII. Closure of the meeting

76. Prior to closing the meeting, co-chair Gosk reminded participants that proponents of one option for D13 as well as proponents of new operations D17, D18, D20, D21, R14 and R17 had been invited to provide additional information and explanations. The EWG agreed for such information to be made available to the Secretariat by 30 June 2019. Co-chair Gosk also reminded participants that they had agreed to share their views on the general issues regarding the review of Annexes I and III by 31 July 2019. Following a question by a member, she said the scheduling of a possible further meeting of the EWG would be considered in light of the outcome of the fourteenth meeting of the Conference of the Parties.

77. The meeting was closed by co-chair Gosk at 7 p.m. on Thursday, 13 December 2018.

Annex

Recommendations by the expert working group on the review of the Annexes for revisions to Annex IV and Annex IX (B1110) for consideration by the Conference of the Parties at its fourteenth meeting

I. Revisions to Annex IV of the Basel Convention

1. The expert working group on the review of the Annexes recommends that revisions to Annex IV should:

(a) Be based on one or more of the objectives of the review of the annex, as set out in the annex to decision BC-13/2, which are to:

- (i) Improve/update the description of disposal operations in Annex IV;
- (ii) Improve environmental controls by including additional disposal operations that occur in practice or could occur in practice in Annex IV;
- (iii) Clarify the descriptions in Annex IV and in Annex IX (B1110) to address conflicts or overlaps;

(b) Maintain the two sections of Annex IV (section A and section B), with captions and introductions for each section;

(c) Add a general introduction¹ for Annex IV;

(d) Include new operations;

(e) Take into account that Annex IV relates to defining wastes and that, accordingly, it encompasses:

- (i) Both environmentally sound and non-environmentally sound operations,
- (ii) Operations irrespective of whether they are legal or illegal,
- (iii) Operations regardless of whether they do not, or only rarely, occur in practice,
- (iv) Operations regardless of whether they are relevant or not in the context of a transboundary movement;

(f) Ensure consistency in the way operations are described in both sections of the Annex.

2. The expert working group on the review of the Annexes also recommends that further work on the review of Annex IV be based on the recommended options set out in annex I to the present recommendations and on new options as needed.

3. Options for revisions to Annex IV are set out in appendix I to the present recommendations.

II. Revisions to Annex IX (B1110) of the Basel Convention

4. The expert working group on the review of the Annexes recommends that further work on the revisions to Annex IX be based on the work it has carried out so far and include the review of mirror entry A1180, as recommended by the Open-ended Working group to the Conference of the Parties in its decision OEWG-11/12.

¹ The textual proposal for a general introduction for Annex IV, as presented but not agreed during the second meeting of the expert working group, is set out in appendix II to the present recommendations.

Appendix I to the recommendations by the expert working group

Recommended options for revisions to Annex IV

The following are recommended options prepared by the expert working group on the review of the Annexes during its second meeting (Buenos Aires, Argentina, 10–13 December 2018) for revisions to Annex IV. The options cover both the captions and introductory texts for Annex IV A and IV B as well as the R and D operations listed in both sections of Annex IV.

Each R and D operation set out in Annex IV has been reviewed by the expert working group. The recommended options do not necessarily reflect the views of all the members and are meant to convey the content of the discussions.

Each option that is recommended was supported by at least one member of the expert working group. The status quo, namely the current drafting of an operation, was supported by at least one member for most operations; when the status quo is not reflected as an option, it is because no member supported it. The options either set out a new drafting proposal for an operation, or a proposed action (e.g. delete, split, merge). Proposed new operations (D16 to D22 and R14 to R17) are listed after operations currently listed in Annex IV for ease of reference, the ordering of the operations will be considered by the expert working group in due course. The proposal to have subcategories for operations (e.g. D8.01), the proposed text for a general introduction for Annex IV¹, and the text of operations set out in parentheses were presented but not discussed.

The expert working group agreed that, should the status quo be retained as an option, any reference to “etc.” would need to be deleted. The group also agreed to not use “etc.” in new textual proposals for operations and in new operations.

More information on the second meeting of the expert working group on the review of the Annexes including meeting documents is available at:

<http://www.basel.int/Implementation/LegalMatters/LegalClarity/Meetings/2ndRAEWGmtg/tabid/7690/Default.aspx>. The report of the meeting is expected to be made available by mid-February 2019.

A. Options for captions and introductory texts for Annex IV A and IV B

I. Annex IV A

1. Option 1: status quo

A. OPERATIONS WHICH DO NOT LEAD TO THE POSSIBILITY OF RESOURCE RECOVERY, RECYCLING, RECLAMATION, DIRECT RE-USE OR ALTERNATIVE USES
Section A encompasses all such disposal operations which occur in practice.

2. Option 2

A. FINAL DISPOSAL OPERATIONS

A final disposal operation is an operation which is not a recovery operation even where the operation has as a secondary consequence the reclamation of substances or energy.

3. Option 3

A. FINAL DISPOSAL OPERATIONS

Final disposal operations are those that don't have as main purpose to recover resources from wastes, even if the operations recover resources as a secondary consequence

4. Option 4

A. FINAL DISPOSAL OPERATIONS

¹ See annex II.

A final disposal operation is an operation which is not a recovery operation. Final disposal operations include operations that have as a secondary consequence the reclamation of useful materials or energy

5. Option 5

A. FINAL DISPOSAL OPERATIONS WHICH DO NOT LEAD TO THE POSSIBILITY OF RESOURCE RECOVERY, RECYCLING, RECLAMATION, RE-USE OR ALTERNATIVE USES

Annex IV.A encompasses all operations which lead to or are final disposal operations

II. Annex IV B

1. Option 1: status quo

B. OPERATIONS WHICH MAY LEAD TO RESOURCE RECOVERY, RECYCLING RECLAMATION, DIRECT RE-USE OR ALTERNATIVE USES

Section B encompasses all such operations with respect to materials legally defined as or considered to be hazardous wastes and which otherwise would have been destined for operations included in Section A.

2. Option 2

B. RECOVERY OPERATIONS

A recovery operation is an operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy

3. Option 3

B. RECOVERY AND RECYCLING OPERATIONS

A recovery operation is an operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy

4. Option 4

B. RECOVERY AND RECYCLING OPERATIONS

Recovery and recycling operations are those that have as main purpose to make use of waste by serving a useful purpose, either by bringing it back into productive use, or replacing other materials or recovering energy from it

B. Options for Annex IV A

D1: Deposit into or onto land, (e.g., landfill, etc.)

1. Deposit onto land other than covered by D5, option 1 (e.g. placement of solids, liquids or sludges into pits; permanent aboveground storage)
2. Deposit into or onto land, (e.g. non engineered landfill, dumpsites) other than by any operations D3 to D5 or D12

D2: Land treatment, (e.g., biodegradation of liquid or sludgy discards in soils, etc.)

0. Status quo
1. Land treatment in situ (e.g. biodegradation or chemical treatment in soils)
2. Treatment of land in situ and ex situ:
 - Landfarming
 - Other than landfarming

D3: Deep injection, (e.g., injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)

0. Status quo

1. Deposit into land other than that covered by D12 (e.g. injection into wells, salt domes of naturally occurring repositories)
2. Deep injection into environmentally engineered locations, (e.g., injection of pumpable discards into wells, salt domes of naturally occurring repositories)

D4: Surface impoundment, (e.g., placement of liquid or sludge discards into pits, ponds or lagoons, etc.)

0. Status quo
1. Surface impoundment, (e.g., placement of liquid or sludge discards into pits, tailings ponds, tailings dams or lagoons)
2. Delete and merge partly with D1, option 1

D5: Specially engineered landfill, (e.g., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.)

0. Status quo
1. Landfilling
2. Engineered landfill (i.e. placement isolated from the environment with, if needed, venting systems, leachate collection and draining systems)

D6: Release into a water body except seas/oceans

0. Status quo

D7: Release into seas/oceans including sea-bed insertion

0. Status quo

D8: Biological treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A

0. Status quo
1. Biological treatment prior to submission to any of the operations in Section A.
2. Split in 2:

D8: Biological treatment as an interim operation prior to any of operations in section A

D8 bis. Biological treatment as a final operation

- D8.01: aeration lagoons
- D8.02: bioventilation (bioventing)
- D8.03: activated sludge
- D8.04: biopiles with added nutrients (composting)
- D8.05: UASB reactors
- D8.06: full mix digesters
- D8.07: another aerobic treatment
- D8.09: another anaerobic treatment

D9: Physico chemical treatment not specified elsewhere in this Annex which results in final compounds or mixtures which are discarded by means of any of the operations in Section A, (e.g., evaporation, drying, calcination, neutralization, precipitation, etc.)

0. Status quo
1. Physical/mechanical treatment (e.g. evaporation, drying), physical/chemical treatment (e.g. solvent extraction) and chemical treatment (e.g. neutralization, precipitation), immobilization (stabilization, solidification) prior to submission to any of the operations in Section A.

2. Split in 2:

D9 Physico chemical treatment as an interim operation prior to any of operations in section A

D9 bis. Physico chemical treatment as a final operation

D9.01: evaporation, drying, dehydration

D9.02: precipitation, flotation, flocculation, coagulation, decantation

D9.03: phase separation, adsorption, desorption, absorption

D9.04: neutralization

D9.05: treatment by adsorption / desorption of activated carbon

D9.06: dechlorination

D9.07: decomposition by oxidation and / or reduction

D9.08: centrifugation, filtering and other selective separation media

D9.09: steam air treatment, condensation

D9.10: autoclave or other similar technology that uses pressure and temperature as process variables, for decontamination of contaminated solids

D9.11: blending or mixing of waste

D9.12: segregation or classification

D9.13: Washing or decontamination

D9.14: Crushing

D9.15: Balling

D9.16: Microencapsulated

D9.17: Macroencapsulation

D9.18: Chemical stabilization

D9.19: Physical stabilization

D9.20: disassembly or separation of components

D9.21: Another waste conditioning operation for further treatment or final disposal

D10: Incineration on land

0. Status quo

1. Thermal treatment (e.g. incineration)

2. Thermal treatments

D10.01: incineration, thermic oxidation or pyrolysis

D10.02: co-incineration

D10.03: gasification

D10.04: thermal desorption

D10.05: vitrification

D10.06: other D10

D11: Incineration at sea

0. Status quo

1. Delete and merge with D10 option 1

2. Delete

D12: Permanent storage (e.g., emplacement of containers in a mine, etc.)

0. Status quo

1. Permanent underground storage (e.g. emplacement of containers in a mine)

(Note: permanent aboveground storage is encompassed in D1 option 1)

2. Split in 2:

D12 Permanent underground storage (e.g. emplacement of containers in a mine)

D12 bis: Permanent aboveground storage

D13: Blending or mixing prior to submission to any of the operations in Section A

0. Status quo
1. Mechanical treatment (e.g. dismantling, sorting, crushing, compacting, pelletizing, shredding, conditioning, repackaging, separating, blending, mixing) prior to submission to any of the operations in section A
2. Mechanical operations (e.g. dismantling, sorting, crushing, compacting, pelletizing, shredding, conditioning, repackaging, separating) prior to submission to any of the operations in section A
3. Delete and merge with D9 option1

D14: Repackaging prior to submission to any of the operations in Section A

0. Status quo
1. Delete and merge with D13, option 1
2. Delete and merge with D15

D15: Storage pending any of the operations in Section A

1. Temporary storage pending any of the operations in section A
2. Temporary storage pending any of the operations in Section A

D15.01: with transfer or repackage
D15.02: without transfer or repackage

NEW OPERATIONS

D16: Release to the atmosphere (e.g. venting of compressed or liquefied gases)

D17: Treatment of waste by nanomaterials

D18: Open burning

D19: Treatment of sterilization or decontamination of biopathological waste

D19.01: autoclave
D19.02: microwave - radio waves.
D19.03: physical sterilization
D19.04: chemical sterilization
D19.05: other method or technology not specified

D20: Final disposal operations other than covered by D1 option1, D2 option1, D3 option1, D5 option1, D6, D7, D10 option1, D12 option1 and D16 above

D21: Other treatment than covered by D8 option1, D9 option1 and D13 option1 above prior to submission to any of the operations in Section A

D22:

1. Operations addressing stabilization and solidification
2. Immobilization (e.g. stabilization, solidification) prior to submission to any of the operations in section A

C. Options for Annex IV B

R1: Use as a fuel (other than in direct incineration) or other means to generate energy

0. Status quo
1. Use as a fuel or other means to generate energy

2. Thermal treatment with the principal purpose to generate energy (e.g. incineration, co-processing)

R2: Solvent reclamation/regeneration

0. Status quo
1. Delete and merge with R3 option1 and R5 option1
2. Solvent reclamation/regeneration.
 - R2.01: distillation / rectification
 - R2.02: filtered
 - R2.03: other R2

R3: Recycling/reclamation of organic substances which are not used as solvents

0. Status quo
1. Recycling of organic substances
2. Recovery of organic substances which are not used as solvents

R4: Recycling/reclamation of metals and metal compounds

0. Status quo
1. Recycling of metals and metal compounds
2. Recovery of metals and metal compounds
 - R4.01: precipitation
 - R4.02: pyrometallurgy
 - R4.03: hydrometallurgy
 - R4.05: unspecified metallurgical processes
 - R4.05: distillation
 - R4.06: decontamination
 - R4.07: metal casting

R5: Recycling/reclamation of other inorganic materials

0. Status quo
1. Recycling of other inorganic materials
2. Recovery of other inorganic materials

R6: Regeneration of acids or bases

0. Status quo
1. Recycling of acids or bases
2. Delete R6 and merge with R3 option1 and R5 option1

R7: Recovery of components used for pollution abatement

0. Status quo
1. Recycling of pollution abatement equipment
2. Delete R7 and merge with R3 option1, R4 option1 and R5 option1
3. Recovery of components used for pollution control
 - R7.01: Recovery or regeneration of activated carbon
 - R7.02: another treatment applied to used components

R8: Recovery of components from catalysts

0. Status quo
1. Recycling of catalysts
2. Recycling/reclamation of catalysts
3. Delete R8 and merge with R3 option1, R4 option1 and R5 option1
4. Recovery of components from catalysts
 - R8.01: hydrometallurgy
 - R8.02: pyrometallurgy
 - R8.03: other R8

R9: Used oil re-refining or other reuses of previously used oil

0. Status quo
1. Re-refining of used oil
2. Refining of used oils and other reusable fluids.
3. Delete and merge with R3 option1
4. Recovery of used oil and hydrocarbons
 - R9.01: filtering or rectification
 - R9.02: distillation of natural or synthetic hydrocarbon-based waste
 - R9.03: use without the need of any further operation from this Annex

R10: Land treatment resulting in benefit to agriculture or ecological improvement

0. Status quo
1. Use of waste for soil, agriculture or other ecological improvement
2. Land treatment other than in D2 resulting in benefit to agriculture or ecological improvement
3. Delete and merge with a catchall element in a new operation (R17)
4. Land treatment resulting in benefit to agriculture or ecological improvement:
 - R10.01: valorization of phosphorus or nitrogen content
 - R10.02: preparation or manufacture of amendments or fertilizers
 - R10.03: improvement of disaggregated soils without an agronomic purpose

R11: Uses of residual materials obtained from any of the operations numbered R1-R10

0. Status quo
1. Delete

R12: Exchange of wastes for submission to any of the operations numbered R1-R11

0. Status quo
1. Blending or mixing of wastes prior to submission to any of the operations numbered R1-R11
2. Mechanical treatment other than blending and mixing of wastes prior to submission to any of the operations numbered R1-R11
3. Split and replace by 4 new operations
 - R12 Biological treatment prior to submission to any of the operations in section B
 - R12 bis Physical/mechanical treatment (e.g. evaporation, drying), physical/chemical treatment (e.g. solvent extraction), chemical treatment (e.g. neutralization, precipitation) prior to submission to any of the operations in section B

R12 ter Mechanical treatment (e.g. dismantling, sorting, crushing, compacting, pelletizing, shredding, conditioning, repackaging, separating, blending, mixing) prior to submission to any of the operations in section B

R12 quater Other treatment than covered by R12, R12bis and R12 ter above prior to submission to any of the operations in section B

4. Physical, mechanical and / or chemical treatment

R12.01: evaporation, drying, dehydration

R12.02: precipitation, flotation, flocculation, coagulation, decantation

R12.03: phase separation, adsorption, desorption, absorption

R12.04: neutralization

R12.05: treatment by adsorption / desorption of activated carbon

R12.06: dechlorination

R12.07: decomposition by oxidation and / or reduction

R12.08: centrifugation, filtering and other selective separation media

R12.09: steam air treatment, condensation

R12.10: autoclave or other similar technology that uses pressure and temperature as process variables, for decontamination of contaminated solids

R12.11: blending or mixture of waste

R12.12: segregation or classification

R12.13: Washing or decontamination

R12.14: Crushing

R12.15: Balanced

R12.16: Microencapsulation

R12.17: Macroencapsulation

R12.18: Chemical stabilization

R12.19: Physical stabilization

R12.20: disassembly or separation of components

R12.21: Another waste conditioning operation for further treatment or final disposal

R12.22: other R12

R13: Accumulation of material intended for any operation in Section B

1. Temporary storage pending any of the operations in section B

2. Temporary storage pending any of the operations in Section B

R13.01: with transfer or repackaging

R13.02: without transfer or repackaging

NEW OPERATIONS

R14: Preparing for re-use (e.g. checking, cleaning, repair, refurbishment)

R15: Co-processing

R16: Repackaging prior to submission to any of the operations in Section B

R17: Recovery other than covered by R1 option2, R3 option1, R4 option1, R5 option1 and R14

Appendix II to the recommendations by the expert working group

General introduction for Annex IV

Annex IV Disposal operations

There are two categories of disposal operations, namely recovery operations and final disposal operations. Section A encompasses final disposal operations and section B recovery operations.

This Annex covers disposal operations including interim operations.

This Annex covers all operations, regardless of their legal status and, as such, regardless of whether they are considered to be environmentally sound.

The principal purpose of a treatment determines the selection of an operation.
