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**Intergovernmental negotiating committee  
to prepare a global legally binding instrument  
on mercury**

**Second session**

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Item 3 of the provisional agenda\*

**Preparation of a global legally binding instrument  
on mercury**

**Collation and analysis of available data on mercury releases in  
relevant sectors at the national level**

**Note by the secretariat**

1. At its first session, held from 7 to 11 June 2010, the intergovernmental negotiating committee to prepare a global legally binding instrument on mercury requested the secretariat to prepare information on various matters, including a collation and analysis of available data in relevant sectors (mercury source categories) at the national level using the “Initial Mercury Profile – Guidance Document” developed under the United Nations Environment Programme (UNEP) Mercury Programme.
2. The secretariat called for additional information in relation to the above request. It has analysed all national inventories of mercury uses and releases submitted to UNEP, as a result of the request, along with information gathered by parties using the above guidance document. The inventories are available on the UNEP website<sup>1</sup> and are analysed below. A summary table setting out more detailed information on the releases in each subcategory for each country is provided as annex I to the present note, while references are provided in annex II.

**Introduction**

3. National mercury release inventories are important for countries in assessing their own situations with regard to mercury pollution and can assist them in prioritizing actions to control and reduce mercury releases.
4. To assist countries’ efforts in developing such inventories, in 2005 UNEP developed a training and guidance document in the form of a toolkit for the identification and quantification of mercury releases. It provides a standardized methodology and accompanying database to enable the development of consistent national and regional mercury inventories, which can enable the development of mercury data sets that are comparable between countries. This is a potentially

\* UNEP(DTIE)/Hg/INC.2/1.

1 [www.unep.org/hazardoussubstances/Mercury/tabid/434/Default.aspx](http://www.unep.org/hazardoussubstances/Mercury/tabid/434/Default.aspx).

important step in developing a global picture of mercury emissions. National release inventories are also important in supporting the verification of global mercury release inventories. As noted in paragraphs 25 and 28 below, a number of countries have reported difficulties in developing accurate emission values as a result of the application of input and release factors derived from other countries and regions that do not adequately take into account national situations. Some, for example, have reported that the use of such factors has resulted in over-estimates of releases from some sectors.

5. A new version of the toolkit has been developed with funding from the Government of Denmark. It provides a more approachable, entry-level methodology to assess mercury releases, intended to make it easier and swifter for countries to develop mercury inventories. It can be downloaded from the secretariat's website.

6. The present note is based on information submitted by Australia, Burkina Faso, Cambodia, the Dominican Republic, Ecuador, Madagascar, Mexico, New Zealand, Pakistan, Panama, Philippines, the Syrian Arab Republic and Yemen. While the Arctic mercury release inventory, which includes regional information from Arctic countries (Canada, Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States of America) is available, the results of that study are not presented herein since most of the countries have updated their release inventories since the release inventory was created.

## I. Results

### A. Releases from the main source categories

7. Table 1 presents, as a percentage of the total release for each country, country estimates of mercury releases from the main source categories, as defined in the toolkit. Most countries have calculated maximum and minimum values of mercury releases, while some have calculated only one value for their releases. For the purposes of this table, the estimated maximum values have been used, while the range of values between estimated maximum and minimum values are shown in table 2.

8. Six sources categories represent some 90 per cent or more of total mercury emissions in most countries examined. These sources categories are:

- (a) Extraction and use of fuel/energy sources;
- (b) Primary (virgin) metal production;
- (c) Production of other minerals and materials with mercury impurities;
- (d) Consumer products with intentional use of mercury;
- (e) Other intentional products/process uses;
- (f) Waste disposition/landfilling and wastewater treatment.

9. The main source subcategories in each country are detailed below. Further information on the subcategories is presented in annex I to the present note.

(a) *Australia*: Gold extraction and initial processing by processes other than mercury amalgamation (31 per cent), light sources with mercury (14 per cent), dental mercury-amalgam filling (11 per cent) and coal combustion in a large power plant (9 per cent);

(b) *Burkina Faso*: Batteries containing mercury (69 per cent) and gold and silver extraction with the mercury-amalgamation process (16 per cent);

(c) *Cambodia*: Batteries containing mercury (57 per cent), controlled landfills/deposit (31 per cent) and gold and silver extraction with the mercury-amalgamation process (8 per cent);

(d) *Dominican Republic*: Controlled landfills/deposit (54 per cent) and cement production (33 per cent);

(e) *Ecuador*: Manometers and gauges (26 per cent), gold extraction and initial processing by processes other than mercury amalgamation (18 per cent), informal dumping of general waste (12 per cent) and extraction, refining and use of mineral oil (9 per cent);

(f) *Madagascar*: Batteries containing mercury (43 per cent), controlled landfills/deposit (22 per cent), cosmetics and related products (11 per cent) and incineration of municipal/general waste (7 per cent);

- (g) *Mexico*: Gold extraction and initial processing by processes other than mercury amalgamation (30 per cent), batteries containing mercury (18 per cent), controlled landfills/deposit (17 per cent) and informal dumping of general waste (6 per cent);
- (h) *New Zealand*: Coal combustion in large power plants (56 per cent), thermometers containing mercury (18 per cent) and controlled landfills/deposits (13 per cent);
- (i) *Pakistan*: Chlor-alkali production with mercury technology (57 per cent), miscellaneous products use, mercury metals and other sources (16 per cent), cement production (7 per cent) and informal dumping of general waste (7 per cent);
- (j) *Panama*: Cement production (35 per cent), batteries containing mercury (20 per cent), informal dumping of general waste (17 per cent) and thermometers containing mercury (9 per cent);
- (k) *Philippines*: Copper extraction and initial processing (70 per cent) and gold and silver extraction with the mercury-amalgamation process (10 per cent);
- (l) *Syrian Arab Republic*: Dental mercury-amalgam filling (36 per cent), controlled landfills/deposit (15 per cent), informal waste incineration (14 per cent) and extraction, refining and use of mineral oil (12 per cent);
- (m) *Yemen*: Electrical and electronic switches, contacts and relays with mercury (52 per cent), extraction, refining and use of mineral oil (26 per cent) and batteries containing mercury (8 per cent).

Table 1  
Mercury releases in the examined countries by main category (percentage of total releases)

| <i>Category</i>  | <i>Australia</i> | <i>Burkina Faso</i> | <i>Cambodia</i> | <i>Dominican Republic</i> | <i>Ecuador</i> | <i>Madagascar</i> | <i>Mexico</i>  | <i>New Zealand</i> | <i>Pakistan</i> | <i>Panama</i> | <i>Philippines</i> | <i>Syrian Arab Republic</i> | <i>Yemen</i> |
|--|------------------|---------------------|-----------------|---------------------------|----------------|-------------------|----------------|--------------------|-----------------|---------------|--------------------|-----------------------------|--------------|
| Extraction and use of fuel/energy sources                              | 13               | 8                   | 0,8             | 0,6                       | 8              | 0,3               | 2              | <b>60</b>          | 4               | —             | <b>3</b>           | <b>16</b>                   | <b>27</b>    |
| Primary (virgin) metal production                                      | <b>43</b>        | <b>16</b>           | <b>8</b>        | —                         | <b>22</b>      | 0,2               | <b>39</b>      | 2                  | —               | —             | <b>80</b>          | —                           | —            |
| Production of other minerals and materials with mercury impurities     | 1                | —                   | —               | <b>34</b>                 | 6              | 1                 | 1              | 1                  | 7               | <b>35</b>     | 0.1                | 4                           | 2            |
| Intentional use of mercury in industrial process                       | 1                | —                   | —               | —                         | —              | —                 | 3              | —                  | <b>57</b>       | —             | 0,5                | 9                           | —            |
| Consumer products with intentional use of mercury                      | <b>26</b>        | <b>74</b>           | <b>57</b>       | 2                         | <b>13</b>      | <b>58</b>         | <b>26</b>      | <b>18</b>          | 19              | <b>31</b>     | 8                  | 5                           | <b>70</b>    |
| Other intentional products/process uses                                | 12               | 0,7                 | 1               | 1                         | <b>25</b>      | 1                 | 2              | 2                  | <b>0</b>        | 12            | <b>6</b>           | <b>36</b>                   | 1            |
| Production of recycled metals ("secondary" metals production)          | 0.3              | —                   | —               | —                         | —              | —                 | —              | —                  | —               | —             | —                  | —                           | —            |
| Waste incineration   | 0,9              | 2                   | 1               | 0,6                       | 2              | 8                 | 2              | —                  | —               | 0.1           | —                  | 14                          | 1            |
| Waste disposition/land filling and waste water treatment               | 2                | 0,3                 | <b>31</b>       | <b>62</b>                 | <b>24</b>      | <b>30</b>         | <b>24</b>      | <b>13</b>          | 0,4             | <b>22</b>     | 2                  | <b>15</b>                   | —            |
| Identification of potential areas with elevated mercury concentrations | 0,7              | —                   | 1               | 0,6                       | 0,2            | 0,9               | 0,2            | 8                  | 13              | 1             | 0.1                | —                           | —            |
| Identification of potential areas with elevated mercury concentrations | —                | —                   | —               | —                         | —              | —                 | —              | —                  | —               | —             | —                  | —                           | —            |
| Total mercury release (kg/year)(rounded to nearest 100 kg/year)        | <b>24 600</b>    | <b>2 500</b>        | <b>14 900</b>   | <b>32 100</b>             | <b>101 600</b> | <b>98 500</b>     | <b>450 000</b> | <b>1 400</b>       | <b>36 900</b>   | <b>8 000</b>  | <b>1 670 000</b>   | <b>17 100</b>               | <b>5 700</b> |

Table 2  
**Estimated maximum and minimum mercury releases in the countries examined (to nearest 100 kg/year)**

| <i>Country</i>       | <i>Minimum mercury release (kg/year)</i> | <i>Maximum mercury release (kg/year)</i> |
|----------------------|--|--|
| Australia*           | 24 600                                   | 24 600                                   |
| Burkina Faso         | 2 500                                    | 2 600                                    |
| Cambodia             | 800                                      | 14 900                                   |
| Dominican Republic   | 2100                                     | 32 100                                   |
| Ecuador              | 56 800                                   | 108 700                                  |
| Madagascar           | 76 300                                   | 93 500                                   |
| Mexico               | 173 300                                  | 1 557 000                                |
| New Zealand*         | 1 400                                    | 1 400                                    |
| Pakistan             | 10 800                                   | 36 900                                   |
| Panama               | 400                                      | 8 000                                    |
| Philippines          | 133 900                                  | 1 667 000                                |
| Syrian Arab Republic | 3 700                                    | 17 100                                   |
| Yemen                | 800                                      | 7 400                                    |

\* Note: Only one value supplied.

## **B. Releases to various environmental media**

10. Table 3 shows estimated maximum releases to various environmental media for each country expressed as a percentage of the country's total mercury releases. The results indicate that most mercury is emitted to air and soil or land.

11. Australia, New Zealand and Panama emitted the highest percentage of their total mercury releases to the atmosphere. In Australia, such releases come mainly from the mining and burning of coal in large power plants, while in New Zealand they come from coal combustion. In Panama, cement production is the main source.

12. Burkina Faso, Cambodia, the Dominican Republic and Mexico emit the greatest percentage of total mercury releases to soil. In Mexico, the mining industry is the most significant source of such releases. In Cambodia and the Dominican Republic they come mainly from waste disposal, while in Burkina Faso the main source is the consumption of products in which mercury has been used intentionally.

13. Wastes constitute another major medium to which mercury is released. Mexico and Pakistan emit the highest percentage of their mercury releases to wastes. Mercury releases from the consumption of products in which mercury has been used intentionally, together with mercury waste disposal in controlled landfills, constitute the greatest release categories in Mexico. Chlor-alkali production using mercury technology is the main source of mercury release to wastes in Pakistan. For the other above-mentioned countries, releases from the consumption of products in which mercury has been used intentionally account for the greatest releases to waste.

Table 3  
Mercury release in the examined countries by media (percentage of total releases)

| <i>Country</i>       | <i>Air</i> | <i>Water</i> | <i>Land</i> | <i>Products</i> | <i>Waste</i> | <i>Sector-specific treatment disposal</i> |
|----------------------|------------|--------------|-------------|-----------------|--------------|---|
| Australia            | <b>62</b>  | 7            | 4           | 1               | <b>26</b>    | —   |
| Burkina Faso         | <b>23</b>  | 5            | <b>72</b>   | 0,4             | 0,1          | 0,1                                       |
| Cambodia             | <b>20</b>  | 2            | <b>48</b>   | —               | —            | —   |
| Dominican Republic   | <b>35</b>  | 9            | <b>54</b>   | —               | 2            | —   |
| Ecuador              | <b>21</b>  | 5            | <b>20</b>   | 1               | 39           | 14  |
| Madagascar           | <b>21</b>  | <b>21</b>    | 13          | <b>21</b>       | 24           | —   |
| Mexico               | 11         | 1            | <b>41</b>   | 5               | <b>42</b>    | —   |
| New Zealand          | 100        | —            | —           | —               | —            | —   |
| Pakistan             | 15         | 12           | 16          | —               | <b>57</b>    | —   |
| Panama               | <b>61</b>  | 6            | 3           | 6               | <b>25</b>    | —   |
| Philippines          | <b>25</b>  | 12           | 13          | 2               | <b>14</b>    | —   |
| Syrian Arab Republic | <b>42</b>  | 15           | 5           | 16              | 20           | 2   |
| Yemen                | <b>33</b>  | 28           | —           | 0.3             | <b>36</b>    | —   |

### C. Mercury releases and challenges in Africa

14. The information in the present section has been extracted from a synopsis document on mercury knowledge and gaps in the African region, which presents information from sub-Saharan Africa and the Southern African Development Community member countries.<sup>2</sup>

15. It appears that widespread use of wood and coal by households for energy is common to many African countries. In Madagascar and the United Republic of Tanzania, 95 per cent and 70 per cent of households, respectively, rely on wood, charcoal or coal to meet their domestic energy needs. Firewood is widely used in Zimbabwe, and in Swaziland wood and coal account for up to half of household energy consumption. Although they are aware that burning coal or wood may harm their health, many people who live in dense, low-income communities continue to use these fuels, mainly owing to factors such as poverty and lack of electricity. Even when households enjoy access to electricity, its high cost means that many continue to use coal and wood for the energy-intensive applications of cooking and heating. Even in the most electrified African country, South Africa, up to half of households rely solely on the use of coal, charcoal and biomass for domestic spatial heating and cooking.

16. Mining makes a significant contribution to mercury releases. It is the largest economic activity in Zambia, the world's fourth largest global copper producer. Primary gold and zinc mining are widespread in the Southern African Development Community member countries, and significant primary ferrous metal production takes place in South Africa. Other minerals are produced throughout the continent.

17. Artisanal and small-scale gold mining is widely known to be practised in most sub-Saharan African countries, including Benin, Botswana, Burkina Faso, Cameroon, Chad, Ethiopia, Gabon, Ghana, Guinea, Kenya, Madagascar, Mali, Malawi, Mauritania, Mozambique, Niger, Nigeria, South

<sup>2</sup> It can be downloaded from [www.unep.org/hazardoussubstances/Mercury/tabid/434/Default.aspx](http://www.unep.org/hazardoussubstances/Mercury/tabid/434/Default.aspx).

Africa, Sudan, Swaziland, Uganda, Senegal, Zambia and Zimbabwe, making it a regional issue common to most (if not all) sub-Saharan countries.

18. In the United Republic of Tanzania, over 500,000 people are reported to participate in artisanal and small-scale gold mining, with the practice spreading as gold prices rise further. Over 1 million people are estimated to depend on this sector in some way. Older people, women and children mainly work in smaller artisanal mining enterprises.

19. In Ghana, more than half of miners and a quarter of non-miners studied had serious mercury toxicity, with up to 7 per cent suffering from slight (or worse) neurological problems. Mercury consumption in the area studied was estimated at 450 kg per year. An environmental survey revealed widespread mercury contamination of sediment and fish; 60 per cent of fish sampled exceeded the United States Food and Drug Administration action level of 1 µg/g. More than 50,000 people reside in the mining areas targeted by the Global Mercury Project developed by the United Nations Industrial Development Organization and may be susceptible to exposure to mercury through aquatic pathways.

20. Another source of mercury releases common to African countries is the production of cement, which can also contain mercury impurities.

21. Trade in mercury-containing products is reported to be a significant issue in the region. Existing methods for tracking mercury trade (in products such as batteries), as in the case of elemental mercury, are generally considered to be inadequate. Unfortunately, the only tariff codes that are currently useful in identifying mercury products are those for various types of mercury-containing lamps, and those for some (but not all) batteries containing mercury. The use of skin-lightening cosmetics is reported to be widespread in many African countries, although the number of creams that contain mercury is relatively small.

22. Directly related to the widespread import of mercury in products is the disposal of those products in Africa, where battery waste is common.

23. In all countries examined, the incineration of medical waste and informal household waste is endemic. The data indicate that such incineration rarely involves the use of mercury abatement technology.

## **II. Lessons learned in using the toolkit**

24. National experts using the UNEP toolkit said that it provided a practical and useful methodology for developing inventories. National data collection was, however, described as challenging by some countries.

25. In their inventories, some countries said that release estimates were subject to large uncertainties as a result of a lack of national data to enable precise quantification of releases, uncertainty in available national data, and uncertainty in estimated values stemming from the use of input and release factors derived from other countries and regions, which were in some cases based on limited data. Most countries lacked national data needed to develop their own national factors.

26. Some release sources cannot be estimated as there are no default factors for some source subcategories.

## **III. Lessons learned in analysing data from national inventories**

27. It has been noted that there are discrepancies between summarized and individual values of mercury releases in several inventories. The present note reproduces the values given by the countries in their summary tables (e.g., total releases, total releases to various media, total releases to subcategories, etc.).

28. To estimate mercury emissions, countries used the default mercury input factors and output distribution factors in the UNEP toolkit. Data are, however, not uniformly presented in the national mercury release reports: varying units are used, the toolkit's source category names are not always used, some have merged some source subcategories, various decimal separation symbols are used and it is not always clear what is used as separator and as decimal separation.

29. The newly developed version of the toolkit is expected to facilitate a more uniform presentation of national mercury inventory results; it features a simplified methodology that, it is hoped, will eliminate or minimize some of the problems described above.

## IV. Conclusions

30. National inventories are important in supporting the verification of global inventories. A standardized method of developing inventories and in presenting data renders it much easier to analyse the data from inventories and to compare data sets in inventories. The UNEP toolkit is recognized as a practical and useful methodology for developing inventories.

31. National mercury release inventories only give a rough picture of mercury releases. The lack of data and the uncertainty of available data have a negative effect on the precision and quality of the results of mercury release inventories. Having an inventory with uncertain release estimates and a description of the uncertainty is, however, generally better than having no inventory at all. An overview of sources, even with a relative quantification of releases, will be useful in prioritizing sources and actions to reduce releases from them. It is general experience that the precision of national pollution inventories generally increases as the work of managing these pollutants progresses and more data become available.

32. Based on the available inventories, it has been determined that six categories of sources represent some 90 per cent or more of total mercury releases in most countries examined. These categories are: extraction and use of fuel/energy sources, primary (virgin) metal production, production of other minerals and materials with mercury impurities, consumer products with intentional use of mercury, other intentional products/process uses and waste disposal including landfilling and wastewater treatment. These releases include emissions to air and releases to water and land.



## Annex I

**Maximum mercury releases in the examined countries by subcategory, as defined in the toolkit  
(percentage of the country's total release)**

| Category                                  |       | Subcategory  | Australia | Burkina Faso | Cambodia | Dominican Republic | Ecuador   | Madagascar | Mexico    | New Zealand | Pakistan | Panama | Philippines | Syrian Arab Republic | Yemen     |
|---|-------|--|-----------|--------------|----------|--------------------|-----------|------------|-----------|-------------|----------|--------|-------------|----------------------|-----------|
| Extraction and use of fuel/energy sources | 5.1.1 | Coal combustion in a large power plants                          | <b>9</b>  | —            | —        | 0.1                | —         | —          | 0.7       | <b>56</b>   | 3        | —      | 0.3         | —                    | —         |
|   | 5.1.3 | Extraction, refining and use of mineral oil                      | 0,9       | 0.02         | 0,8      | 0,5                | <b>9</b>  | 0,1        | 1         | —           | —        | 0.03   | 0.01        | <b>12</b>            | <b>26</b> |
|   | 5.1.7 | Geothermal power production                                      | —         | —            | —        | —                  | —         | —          | —         | —           | —        | —      | 3           | —                    | —         |
| Primary (virgin) metal production         | 5.2.2 | Gold and silver extraction with the mercury-amalgamation process | —         | <b>16</b>    | <b>8</b> | 0,04               | 3         | 0.2        | —         | —           | —        | —      | <b>10</b>   | —                    | —         |
|   | 5.2.3 | Zinc extraction and initial processing                           | 4         | —            | —        | —                  | —         | —          | 6         | —           | —        | —      | —           | —                    | —         |
|   | 5.2.4 | Copper extraction and initial processing                         | —         | —            | —        | —                  | —         | —          | 2         | —           | —        | —      | <b>70</b>   | —                    | —         |
|   | 5.2.6 | Gold extraction and initial processing by other processes        | 31        | —            | —        | —                  | <b>19</b> | —          | <b>30</b> | —           | —        | —      | —           | —                    | —         |

| Category   |       | Subcategory  | Australia | Burkina Faso | Cambodia  | Dominican Republic | Ecuador  | Madagascar | Mexico    | New Zealand | Pakistan  | Panama    | Philippines | Syrian Arab Republic | Yemen     |
|--|-------|--|-----------|--------------|-----------|--------------------|----------|------------|-----------|-------------|-----------|-----------|-------------|----------------------|-----------|
|  |       | than mercury amalgamation  |           |              |           |                    |          |            |           |             |           |           |             |                      |           |
|  | 5.2.7 | Aluminium extraction and initial processing                        | <b>8</b>  | —            | —         | —                  | —        | —          | —         | —           | —         | —         | —           | —                    | —         |
| Production of other minerals and materials with mercury impurities | 5.3.1 | Cement production  | 1         | —            | —         | 34                 | 6        | 1          | 1         | 1           | <b>7</b>  | <b>35</b> | 0.1         | 4                    | 2         |
| Intentional use of mercury in industrial process                   | 5.4.1 | Chlor-alkali production with mercury technology                    | 1         | —            | —         | —                  | —        | 0          | 3         | —           | <b>57</b> | —         | 0.5         | <b>9</b>             | —         |
| Consumer products with intentional use of mercury                  | 5.5.1 | Thermometer with mercury   | 2         | 0,4          | 0,1       | 0,8                | 2        | 0.5        | 0.5       | <b>18</b>   | 1         | <b>9</b>  | 5           | 5                    | 0.04      |
|  | 5.5.2 | Electrical and electronic switch, contacts and relays with mercury | <b>8</b>  | —            | —         | —                  | 3        | <b>4</b>   | 2         | —           | —         | 2         | 1           | —                    | <b>52</b> |
|  | 5.5.3 | Light sources with mercury   | <b>14</b> | 0.8          | —         | 1                  | —        | —          | 0,3       | —           | 0,2       | 0,1       | 1           | —                    | <b>4</b>  |
|  | 5.5.4 | Batteries containing mercury                                       | 1         | <b>69</b>    | <b>57</b> | 0,1                | <b>9</b> | <b>43</b>  | <b>18</b> | —           | 1         | <b>20</b> | —           | —                    | <b>8</b>  |
|  | 5.5.8 | Cosmetics and related products                                     | —         | <b>4</b>     | —         | —                  | —        | <b>11</b>  | —         | —           | —         | —         | —           | —                    | 4         |

| Category   |       | Subcategory  | Australia | Burkina Faso | Cambodia  | Dominican Republic | Ecuador   | Madagascar | Mexico    | New Zealand | Pakistan  | Panama    | Philippines | Syrian Arab Republic | Yemen |
|--|-------|--|-----------|--------------|-----------|--------------------|-----------|------------|-----------|-------------|-----------|-----------|-------------|----------------------|-------|
| Other intentional products/process uses                  | 5.6.1 | Dental mercury-amalgam filling                               | <b>11</b> | 0.7          | 1         | —                  | 0,7       | 1          | 2         | 2           | —         | 6         | 0,6         | <b>36</b>            | 0,7   |
|  | 5.6.2 | Manometers and gauges  | —         | —            | —         | —                  | <b>26</b> | —          | —         | —           | —         | 2         | 0.01        | —                    | 0,1   |
|  | 5.6.5 | Miscellaneous products use, mercury metals and other sources | 0.02      | —            | —         | —                  | —         | —          | —         | —           | <b>16</b> | —         | 1           | —                    | —     |
| Waste incineration                                       | 5.8.1 | Incineration of municipal/general waste                      | —         | —            | 0.2       | —                  | 0.01      | <b>7</b>   | —         | —           | —         | 0,01      | —           | —                    | —     |
|  | 5.8.5 | Informal waste incineration                                  | —         | 0.04         | —         | —                  | 2         | —          | 2         | —           | —         | —         | —           | <b>14</b>            | —     |
| Waste disposition/land filling and waste water treatment | 5.9.1 | Controlled landfills/deposit                                 | 2         | 0.04         | <b>31</b> | <b>52</b>          | 2         | <b>22</b>  | <b>17</b> | <b>13</b>   | <b>5</b>  | 5         | 0,3         | <b>15</b>            | —     |
|  | 5.9.3 | Informal local deposition industrial products waste          | —         | —            | —         | —                  | <b>12</b> | 1          | —         | —           | —         | —         | 0,4         | —                    | —     |
|  | 5.9.4 | Informal dumping of general waste                            | —         | —            | —         | —                  | —         | —          | <b>6</b>  | —           | <b>7</b>  | <b>17</b> | 0,5         | —                    | —     |

## Annex II

### Sources

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