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## **Report on the simplified review of the national inventory report of Ukraine submitted in 2025**

### *Summary*

This report presents the results of the simplified review of the 2025 national inventory report of Ukraine, conducted by the secretariat in accordance with the modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement.



## Abbreviations and acronyms

|                    |  |
|--------------------|--|
| CH <sub>4</sub>    | methane  |
| CO <sub>2</sub>    | carbon dioxide   |
| CO <sub>2</sub> eq | carbon dioxide equivalent  |
| CRT                | common reporting table   |
| GHG                | greenhouse gas   |
| HFC                | hydrofluorocarbon  |
| IEF                | implied emission factor  |
| LULUCF             | land use, land-use change and forestry   |
| MPGs               | modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement |
| N                  | nitrogen   |
| N <sub>2</sub> O   | nitrous oxide  |
| NA                 | not applicable   |
| NE                 | not estimated  |
| NF <sub>3</sub>    | nitrogen trifluoride   |
| NIR                | national inventory report  |
| NO                 | not occurring  |
| PFC                | perfluorocarbon  |

## I. Introduction

1. This report covers the simplified review of the NIR of Ukraine submitted in 2025. The review was conducted by the secretariat in accordance with the MPGs,<sup>1</sup> particularly chapter VII thereof, and the simplified review procedures.<sup>2</sup>
2. On 14 May 2025 a draft version of this report was transmitted to the Government of Ukraine,<sup>3</sup> which did not provide any comments on individual findings or any general comments on the report.
3. The secretariat conducted the simplified review of Ukraine's NIR, which involved an initial assessment of completeness and consistency with the MPGs.<sup>4</sup>
4. The findings of the initial assessment, presented in the annex, are the result of automated checks and do not necessarily indicate issues of completeness or consistency of the Party's reporting with the MPGs.
5. This report, including the findings listed in the annex and any comments provided by the Party (see para. 2 above), will be made available to and considered by the technical expert review team as part of the subsequent technical expert review of Ukraine's NIR.<sup>5</sup>

## II. Initial assessment of completeness and consistency with the modalities, procedures and guidelines

### A. Summary of findings

6. The table below provides a summary of the findings of the initial assessment by the secretariat. Tables I.1–I.7 list the findings and include detailed information on each one.

#### Summary of the initial assessment

| Area of review                    | Description   | Assessment                |
|-----------------------------------|---|---------------------------|
| Dates of submission               | 2025 submission: CRTs, 2 April 2025<br>2024 submission: CRTs, 30 December 2024  |                           |
| Recalculations                    | Recalculations that have changed estimated total GHG emissions or removals (excluding LULUCF) by more than 2 per cent for categories or subcategories above the threshold of significance ( <b>116.43 kt CO<sub>2</sub> eq</b> for 2023) <sup>a</sup><br><br>Recalculations for 1990 (the reference year for the Party's nationally determined contribution) and 2022 since the previous submission | See table I.1             |
| Completeness                      | Detection of notation key "NE", or of missing gases or sectors in CRT 10 emission trends summary  | See table I.2             |
| Notation keys                     | Changes in notation keys reported for 1990 and 2022 since the previous submission   | No findings for this area |
| Sectoral and reference approaches | Difference in estimated energy consumption or CO <sub>2</sub> emissions, by fuel type, of more than 5 per cent between the reference and sectoral approaches for the latest reported year (2023)  | See table I.4             |
| Time-series consistency           | The time series of emissions is assessed by calculating inter-annual changes for each category and gas and converting them to CO <sub>2</sub> eq. Inter-annual changes exceeding the significance threshold are evaluated using the z-score method, <sup>b</sup> where outliers   | See table I.5             |

<sup>1</sup> Decision 18/CMA.1, annex.

<sup>2</sup> Contained in paras. 15–19 of the conclusions and recommendations from the 2023 joint meeting of lead reviewers, available at <https://unfccc.int/documents/627213>.

<sup>3</sup> As per para. 163 of the MPGs.

<sup>4</sup> As per para. 155 of the MPGs.

<sup>5</sup> As per para. 155 of the MPGs.

| <i>Area of review</i>         | <i>Description</i>   | <i>Assessment</i> |
|-------------------------------|--|-------------------|
|                               | are identified as values exceeding a z-score of 3, based on the statistical distribution of the full time series   |                   |
| IEFs                          | Comparison of IEFs reported for any significant subcategories under key categories with the range of IEFs reported by developed country Parties for the latest inventory year (2023) in their 2025 submission <sup>c</sup> | See table I.6     |
| Key categories                | New key categories identified since the previous submission for level (latest year) and trend  | See table I.7     |
| Previous areas of improvement | Status of implementation of previous areas of improvement identified in the latest report on the technical expert review of the Party's biennial transparency report   | NA <sup>d</sup>   |

<sup>a</sup> Threshold calculated by the secretariat as 0.05 per cent of the national total GHG emissions for 2023, excluding LULUCF, or 500 kt CO<sub>2</sub> eq, whichever is lower (see para. 32 of the MPGs).

<sup>b</sup> Statistical measure that indicates how many standard deviations a data point is from the mean.

<sup>c</sup> Range defined by the median plus or minus two times the standard deviation, calculated from all available data points per category.

<sup>d</sup> As at the time of publication of this report, information on status of implementation of previous areas of improvement was not yet available.

## **B. Comments of the Party on the initial assessment**

7. The Party did not provide any general comments.

## Annex

### Findings of the initial assessment of Ukraine's 2025 national inventory report

Tables I.1–I.7 detail the findings of the initial assessment by the secretariat of the Party's NIR.

Table I.1

#### Findings on recalculations

| <i>ID#</i> | <i>Category</i>                            | <i>CRT</i> | <i>Gas</i>                                | <i>Inventory<br/>year</i> | <i>Estimate in<br/>latest<br/>submission<br/>(2025)</i> | <i>Estimate in<br/>previous<br/>submission<br/>(2024)</i> | <i>Difference Unit</i>        | <i>Difference (%)</i> | <i>Difference (kt<br/>CO<sub>2</sub> eq)</i> |
|------------|--|------------|---|---------------------------|---|---|-------------------------------|-----------------------|--|
| I.1.1.     | 3.A.1.a. Other                             | Table3     | CH <sub>4</sub>                           | 1990                      | 1 509.31  | 1 461.46  | 47.85 kt                      | 3.3                   | 1 339.80                                     |
| I.1.2.     | 3.A.2. Sheep                               | Table3     | CH <sub>4</sub>                           | 1990                      | 56.00   | 60.91   | –4.91 kt                      | –8.1                  | –137.56                                      |
| I.1.3.     | 3.B.5. Indirect N <sub>2</sub> O emissions | Table3     | N <sub>2</sub> O                          | 1990                      | 5.20  | 4.67  | 0.53 kt                       | 11.3                  | 140.27                                       |
| I.1.4.     | 3.D.1.b. Organic N fertilizers             | Table3     | N <sub>2</sub> O                          | 1990                      | 8.46  | 7.78  | 0.67 kt                       | 8.7                   | 178.70                                       |
| I.1.5.     | 3.B.3. Swine                               | Table3     | CH <sub>4</sub>                           | 2022                      | 32.51   | 16.91   | 15.60 kt                      | 92.2                  | 436.71                                       |
| I.1.6.     | 3.D.1.b. Organic N fertilizers             | Table3     | N <sub>2</sub> O                          | 2022                      | 2.34  | 1.81  | 0.53 kt                       | 29.2                  | 140.13                                       |
| I.1.7.     | 4.C.1. Grassland remaining grassland       | Table4     | Net CO <sub>2</sub><br>emissions/removals | 1990                      | –1 539.61   | –812.51   | –727.11 kt CO <sub>2</sub> eq | 89.5                  | –727.11                                      |
| I.1.8.     | 4.C.1. Grassland remaining grassland       | Table4     | Net CO <sub>2</sub><br>emissions/removals | 2022                      | 104.05  | 228.51  | –124.47 kt CO <sub>2</sub> eq | –54.5                 | –124.47                                      |
| I.1.9.     | 5.D.1. Domestic wastewater                 | Table5     | CH <sub>4</sub>                           | 2022                      | 142.12  | 136.11  | 6.01 kt                       | 4.4                   | 168.26                                       |

Table I.2

#### Findings on completeness

| <i>ID#</i> | <i>Sector, category or gas</i>     | <i>CRT</i> | <i>Gas</i>          | <i>Inventory<br/>year</i> | <i>Notation key Finding type</i>      |
|------------|------------------------------------|------------|---------------------|---------------------------|---------------------------------------|
| I.2.1.     | 1.B.1.a. Coal mining and handling  | Table1     | CO <sub>2</sub>     | 1990                      | NA, NE, NO Reporting of “NE” detected |
| I.2.2.     | 1.D.2. Multilateral operations     | Table1     | CO <sub>2</sub>     | 1990                      | NE Reporting of “NE” detected         |
| I.2.3.     | 1.D.2. Multilateral operations     | Table1     | CH <sub>4</sub>     | 1990                      | NE Reporting of “NE” detected         |
| I.2.4.     | 1.D.2. Multilateral operations     | Table1     | N <sub>2</sub> O    | 1990                      | NE Reporting of “NE” detected         |
| I.2.5.     | 1.D.2. Multilateral operations     | Table1     | Total GHG emissions | 1990                      | NE Reporting of “NE” detected         |
| I.2.6.     | 1.B.1.a. Coal mining and handling  | Table1     | CO <sub>2</sub>     | 2023                      | NA, NE, NO Reporting of “NE” detected |
| I.2.7.     | 2.B.1. Ammonia production          | Table2(I)  | CH <sub>4</sub>     | 1990                      | NE Reporting of “NE” detected         |
| I.2.8.     | 2.B.1. Ammonia production          | Table2(I)  | CH <sub>4</sub>     | 2023                      | NE Reporting of “NE” detected         |
| I.2.9.     | 4.B.1. Cropland remaining cropland | Table4     | CH <sub>4</sub>     | 1990                      | NA, NE, NO Reporting of “NE” detected |

| ID#     | Sector, category or gas          | CRT       | Gas                 | Inventory | Notation key | Finding type               |
|---------|----------------------------------|-----------|---------------------|-----------|--------------|----------------------------|
|         |                                  |           |                     | year      |              |                            |
| I.2.10. | 5.C.2. Open burning of waste     | Table5    | CO <sub>2</sub>     | 1990      | NE           | Reporting of “NE” detected |
| I.2.11. | 5.C.2. Open burning of waste     | Table5    | CH <sub>4</sub>     | 1990      | NE           | Reporting of “NE” detected |
| I.2.12. | 5.C.2. Open burning of waste     | Table5    | N <sub>2</sub> O    | 1990      | NE           | Reporting of “NE” detected |
| I.2.13. | 5.C.2. Open burning of waste     | Table5    | Total GHG emissions | 1990      | NE           | Reporting of “NE” detected |
| I.2.14. | 5.C.2. Open burning of waste     | Table5    | CO <sub>2</sub>     | 2023      | NE           | Reporting of “NE” detected |
| I.2.15. | 5.C.2. Open burning of waste     | Table5    | CH <sub>4</sub>     | 2023      | NE           | Reporting of “NE” detected |
| I.2.16. | 5.C.2. Open burning of waste     | Table5    | N <sub>2</sub> O    | 2023      | NE           | Reporting of “NE” detected |
| I.2.17. | 5.C.2. Open burning of waste     | Table5    | Total GHG emissions | 2023      | NE           | Reporting of “NE” detected |
| I.2.18. | HFCs                             | Table10s6 | –                   | 1990      | NO           | Gas or sector not reported |
| I.2.19. | PFCs                             | Table10s6 | –                   | 2023      | NO           | Gas or sector not reported |
| I.2.20. | Unspecified mix of HFCs and PFCs | Table10s6 | –                   | 1990      | NO           | Gas or sector not reported |
| I.2.21. | Unspecified mix of HFCs and PFCs | Table10s6 | –                   | 2023      | NO           | Gas or sector not reported |
| I.2.22. | NF <sub>3</sub>                  | Table10s6 | –                   | 1990      | NO           | Gas or sector not reported |
| I.2.23. | NF <sub>3</sub>                  | Table10s6 | –                   | 2023      | NO           | Gas or sector not reported |
| I.2.24. | 6. Other                         | Table10s6 | –                   | 1990      | NO           | Gas or sector not reported |
| I.2.25. | 6. Other                         | Table10s6 | –                   | 2023      | NO           | Gas or sector not reported |

Table I.3  
Changes in notation keys reported since the previous submission

|                           |          |     |     | Inventory | Notation key                         | Notation key                           |
|---------------------------|----------|-----|-----|-----------|--------------------------------------|--|
| ID#                       | Category | CRT | Gas | year      | reported in latest submission (2025) | reported in previous submission (2024) |
| No findings for this area |          |     |     |           |                                      |  |

Table I.4  
Differences between the sectoral and reference approaches for the latest reported year

| ID#    | CRT table   | Fuel type                                      | Description               | Difference between                    |
|--------|-------------|--|---------------------------|---------------------------------------|
|        |             |  |                           | reference and sectoral approaches (%) |
| I.4.1. | Table1.A(c) | Liquid fuels (excluding international bunkers) | Energy consumption        | 18.4                                  |
| I.4.2. | Table1.A(c) | Liquid fuels (excluding international bunkers) | CO <sub>2</sub> emissions | 19.1                                  |
| I.4.3. | Table1.A(c) | Gaseous fuels                                  | Energy consumption        | –16.8                                 |
| I.4.4. | Table1.A(c) | Gaseous fuels                                  | CO <sub>2</sub> emissions | –17.0                                 |
| I.4.5. | Table1.A(c) | Other fossil fuels                             | Energy consumption        | –100.0                                |
| I.4.6. | Table1.A(c) | Other fossil fuels                             | CO <sub>2</sub> emissions | –100.0                                |

| <i>ID#</i> | <i>CRT table</i> | <i>Fuel type</i> | <i>Description</i>        | <i>Difference between<br/>reference and sectoral<br/>approaches (%)</i> |
|------------|------------------|------------------|---------------------------|---|
| I.4.7.     | Table1.A(c)      | Peat             | Energy consumption        | 36.6  |
| I.4.8.     | Table1.A(c)      | Peat             | CO <sub>2</sub> emissions | 36.6  |

Table I.5  
Findings on time-series consistency

| <i>ID#</i> | <i>Category</i>   | <i>CRT</i> | <i>Gas</i>       | <i>Year 1</i> | <i>Year 2</i> | <i>Value 1</i> | <i>Value 2</i> | <i>Difference</i> | <i>Unit</i> | <i>Difference<br/>(CO<sub>2</sub> eq)</i> | <i>Difference<br/>(%)</i> | <i>Z-score</i> |
|------------|---|------------|------------------|---------------|---------------|----------------|----------------|-------------------|-------------|---|---------------------------|----------------|
| I.5.1.     | 1.A.1.b. Petroleum refining                                     | Table1     | CO <sub>2</sub>  | 1991          | 1992          | 5 506.98       | 3 282.16       | -2 224.82         | kt          | -2 224.82                                 | -40.4                     | -3.5           |
| I.5.2.     | 1.A.1.c. Manufacture of solid fuels and other energy industries | Table1     | CO <sub>2</sub>  | 1994          | 1995          | 9 135.05       | 5 042.18       | -4 092.87         | kt          | -4 092.87                                 | -44.8                     | -3.1           |
| I.5.3.     | 1.A.2.a. Iron and steel   | Table1     | CO <sub>2</sub>  | 1993          | 1994          | 35 572.87      | 21 482.59      | -14 090.28        | kt          | -14 090.28                                | -39.6                     | -3.1           |
| I.5.4.     | 1.A.2.c. Chemicals  | Table1     | CO <sub>2</sub>  | 1993          | 1994          | 3 288.03       | 2 137.04       | -1 150.99         | kt          | -1 150.99                                 | -35.0                     | -3.8           |
| I.5.5.     | 1.A.2.d. Pulp, paper and print                                  | Table1     | CO <sub>2</sub>  | 1991          | 1992          | 163.64         | 327.57         | 163.93            | kt          | 163.93                                    | 100.2                     | 3.5            |
| I.5.6.     | 1.A.2.e. Food processing, beverages and tobacco                 | Table1     | CO <sub>2</sub>  | 1996          | 1997          | 2 309.11       | 1 104.19       | -1 204.92         | kt          | -1 204.92                                 | -52.2                     | -3.1           |
| I.5.7.     | 1.A.2.f. Non-metallic minerals                                  | Table1     | CO <sub>2</sub>  | 1993          | 1994          | 13 199.03      | 6 863.25       | -6 335.78         | kt          | -6 335.78                                 | -48.0                     | -3.7           |
| I.5.8.     | 1.A.2.g. Other  | Table1     | CO <sub>2</sub>  | 1991          | 1992          | 25 934.39      | 8 538.18       | -17 396.21        | kt          | -17 396.21                                | -67.1                     | -5.1           |
| I.5.9.     | 1.A.3.a. Domestic aviation                                      | Table1     | CO <sub>2</sub>  | 1991          | 1992          | 619.36         | 341.54         | -277.82           | kt          | -277.82                                   | -44.9                     | -3.5           |
| I.5.10.    | 1.A.3.b. Road transportation                                    | Table1     | CO <sub>2</sub>  | 1990          | 1991          | 59 916.59      | 45 482.65      | -14 433.95        | kt          | -14 433.95                                | -24.1                     | -3.2           |
| I.5.11.    | 1.A.3.b. Road transportation                                    | Table1     | CH <sub>4</sub>  | 1990          | 1991          | 10.38          | 6.15           | -4.23             | kt          | -118.32                                   | -40.7                     | -3.5           |
| I.5.12.    | 1.A.3.b. Road transportation                                    | Table1     | N <sub>2</sub> O | 1990          | 1991          | 4.00           | 2.82           | -1.17             | kt          | -311.34                                   | -29.4                     | -3.8           |
| I.5.13.    | 1.A.3.d. Domestic navigation                                    | Table1     | CO <sub>2</sub>  | 1991          | 1992          | 2 521.28       | 1 363.25       | -1 158.03         | kt          | -1 158.03                                 | -45.9                     | -4.3           |
| I.5.14.    | 1.A.3.e. Other transportation                                   | Table1     | CH <sub>4</sub>  | 1990          | 1991          | 17.21          | 24.26          | 7.06              | kt          | 197.55                                    | 41.0                      | 3.7            |
| I.5.15.    | 1.A.3.e. Other transportation                                   | Table1     | N <sub>2</sub> O | 1990          | 1991          | 8.07           | 5.34           | -2.73             | kt          | -724.07                                   | -33.9                     | -4.3           |
| I.5.16.    | 1.A.4.a. Commercial/institutional                               | Table1     | CO <sub>2</sub>  | 1996          | 1997          | 18 025.99      | 9 715.99       | -8 310.00         | kt          | -8 310.00                                 | -46.1                     | -3.1           |
| I.5.17.    | 1.A.4.a. Commercial/institutional                               | Table1     | CH <sub>4</sub>  | 1991          | 1992          | 3.85           | 8.82           | 4.97              | kt          | 139.05                                    | 128.9                     | 3.8            |
| I.5.18.    | 1.A.4.b. Residential  | Table1     | CO <sub>2</sub>  | 1990          | 1991          | 56 448.26      | 43 300.46      | -13 147.81        | kt          | -13 147.81                                | -23.3                     | -3.5           |
| I.5.19.    | 1.A.4.b. Residential  | Table1     | CH <sub>4</sub>  | 1990          | 1991          | 113.10         | 41.67          | -71.42            | kt          | -1 999.85                                 | -63.2                     | -5.4           |
| I.5.20.    | 1.A.4.c. Agriculture/forestry/fishing                           | Table1     | CO <sub>2</sub>  | 1993          | 1994          | 2 140.28       | 1 167.37       | -972.91           | kt          | -972.91                                   | -45.5                     | -3.5           |
| I.5.21.    | 1.A.5.b. Mobile   | Table1     | CO <sub>2</sub>  | 2021          | 2022          | 383.15         | 869.85         | 486.70            | kt          | 486.70                                    | 127.0                     | 4.3            |
| I.5.22.    | 1.B.2.a. Oil  | Table1     | CH <sub>4</sub>  | 2022          | 2023          | 56.32          | 78.35          | 22.03             | kt          | 616.92                                    | 39.1                      | 3.5            |
| I.5.23.    | 1.B.2.b. Natural gas  | Table1     | CO <sub>2</sub>  | 1990          | 1991          | 2 273.49       | 1 973.23       | -300.26           | kt          | -300.26                                   | -13.2                     | -3.2           |
| I.5.24.    | 1.B.2.b. Natural gas  | Table1     | CO <sub>2</sub>  | 1991          | 1992          | 1 973.23       | 1 692.52       | -280.71           | kt          | -280.71                                   | -14.2                     | -3.0           |
| I.5.25.    | 1.D.1.b. Navigation   | Table1     | CO <sub>2</sub>  | 1996          | 1997          | 1 041.86       | 510.62         | -531.24           | kt          | -531.24                                   | -51.0                     | -4.0           |
| I.5.26.    | 2.A.1. Cement production  | Table2(I)  | CO <sub>2</sub>  | 2008          | 2009          | 6 293.78       | 2 590.09       | -3 703.69         | kt          | -3 703.69                                 | -58.8                     | -3.6           |
| I.5.27.    | 2.A.3. Glass production   | Table2(I)  | CO <sub>2</sub>  | 2000          | 2001          | 79.12          | 215.29         | 136.17            | kt          | 136.17                                    | 172.1                     | 3.2            |

| <i>ID#</i> | <i>Category</i>   | <i>CRT</i> | <i>Gas</i>                                | <i>Year 1</i> | <i>Year 2</i> | <i>Value 1</i> | <i>Value 2</i> | <i>Difference</i> | <i>Unit</i>           | <i>Difference<br/>(CO<sub>2</sub> eq)</i> | <i>Difference<br/>(%)</i> | <i>Z-score</i> |
|------------|---|------------|---|---------------|---------------|----------------|----------------|-------------------|-----------------------|---|---------------------------|----------------|
| I.5.28.    | 2.A.3. Glass production                                       | Table2(I)  | CO <sub>2</sub>                           | 2021          | 2022          | 289.54         | 127.32         | -162.22           | kt                    | -162.22                                   | -56.0                     | -3.7           |
| I.5.29.    | 2.B.2. Nitric acid production                                 | Table2(I)  | N <sub>2</sub> O                          | 2021          | 2022          | 12.62          | 4.50           | -8.12             | kt                    | -2 151.12                                 | -64.3                     | -3.1           |
| I.5.30.    | 2.B.8. Petrochemical and carbon black production              | Table2(I)  | CO <sub>2</sub>                           | 1994          | 1995          | 1 503.82       | 560.46         | -943.37           | kt                    | -943.37                                   | -62.7                     | -3.0           |
| I.5.31.    | 2.B.8. Petrochemical and carbon black production              | Table2(I)  | CH <sub>4</sub>                           | 2021          | 2022          | 134.22         | 19.38          | -114.84           | kt                    | -3 215.52                                 | -85.6                     | -3.6           |
| I.5.32.    | 2.C.1. Iron and steel production                              | Table2(I)  | CO <sub>2</sub>                           | 2021          | 2022          | 36 765.61      | 10 827.40      | -25 938.21        | kt                    | -25 938.21                                | -70.6                     | -3.8           |
| I.5.33.    | 2.C.1. Iron and steel production                              | Table2(I)  | CH <sub>4</sub>                           | 2021          | 2022          | 21.35          | 6.21           | -15.15            | kt                    | -424.10                                   | -70.9                     | -3.5           |
| I.5.34.    | 2.D.1. Lubricant use  | Table2(I)  | CO <sub>2</sub>                           | 1995          | 1996          | 133.84         | 283.60         | 149.76            | kt                    | 149.76                                    | 111.9                     | 3.3            |
| I.5.35.    | 3.B.1. Cattle   | Table3     | N <sub>2</sub> O                          | 1996          | 1997          | 2.27           | 1.68           | -0.59             | kt                    | -155.60                                   | -25.9                     | -3.3           |
| I.5.36.    | 3.B.1.a. Other  | Table3     | N <sub>2</sub> O                          | 1996          | 1997          | 2.27           | 1.68           | -0.59             | kt                    | -155.60                                   | -25.9                     | -3.3           |
| I.5.37.    | 3.D.1.a. Inorganic N fertilizers                              | Table3     | N <sub>2</sub> O                          | 2021          | 2022          | 31.40          | 22.09          | -9.30             | kt                    | -2 465.34                                 | -29.6                     | -3.1           |
| I.5.38.    | 3.D.1.b. Organic N fertilizers                                | Table3     | N <sub>2</sub> O                          | 1996          | 1997          | 5.61           | 4.58           | -1.03             | kt                    | -274.12                                   | -18.4                     | -3.2           |
| I.5.39.    | 3.D.2. Indirect N <sub>2</sub> O emissions from managed soils | Table3     | N <sub>2</sub> O                          | 2021          | 2022          | 24.37          | 17.62          | -6.75             | kt                    | -1 790.03                                 | -27.7                     | -3.0           |
| I.5.40.    | 3.G. Liming   | Table3     | CO <sub>2</sub>                           | 1990          | 1991          | 2 592.08       | 1 351.26       | -1 240.82         | kt                    | -1 240.82                                 | -47.9                     | -4.1           |
| I.5.41.    | 3.G. Liming   | Table3     | CO <sub>2</sub>                           | 1995          | 1996          | 1 351.26       | 299.20         | -1 052.06         | kt                    | -1 052.06                                 | -77.9                     | -3.5           |
| I.5.42.    | 4.A.1. Forest land remaining forest land                      | Table4     | CH <sub>4</sub>                           | 2019          | 2020          | 0.08           | 11.14          | 11.07             | kt                    | 309.82                                    | 14 081.1                  | 3.7            |
| I.5.43.    | 4.A.1. Forest land remaining forest land                      | Table4     | CH <sub>4</sub>                           | 2020          | 2021          | 11.14          | 0.02           | -11.13            | kt                    | -311.54                                   | -99.8                     | -3.8           |
| I.5.44.    | 4.A.1. Forest land remaining forest land                      | Table4     | N <sub>2</sub> O                          | 2019          | 2020          | 0.19           | 0.80           | 0.61              | kt                    | 162.21                                    | 329.0                     | 3.7            |
| I.5.45.    | 4.A.1. Forest land remaining forest land                      | Table4     | N <sub>2</sub> O                          | 2020          | 2021          | 0.80           | 0.18           | -0.62             | kt                    | -163.11                                   | -77.1                     | -3.8           |
| I.5.46.    | 4.A.2. Land converted to forest land                          | Table4     | Net CO <sub>2</sub><br>emissions/removals | 2015          | 2016          | -1 103.07      | -1 376.61      | -273.54           | kt CO <sub>2</sub> eq | -273.54                                   | 24.8                      | -4.1           |
| I.5.47.    | 4.B.2. Land converted to cropland                             | Table4     | Net CO <sub>2</sub><br>emissions/removals | 2011          | 2012          | -1 473.73      | 1.46           | 1 475.19          | kt CO <sub>2</sub> eq | 1 475.19                                  | -100.1                    | 3.7            |
| I.5.48.    | 4.C.2. Land converted to grassland                            | Table4     | Net CO <sub>2</sub><br>emissions/removals | 1992          | 1993          | -329.92        | -1 209.17      | -879.25           | kt CO <sub>2</sub> eq | -879.25                                   | 266.5                     | -3.4           |
| I.5.49.    | 4.C.2. Land converted to grassland                            | Table4     | Net CO <sub>2</sub><br>emissions/removals | 2012          | 2013          | -2 025.14      | -1 197.22      | 827.91            | kt CO <sub>2</sub> eq | 827.91                                    | -40.9                     | 3.1            |
| I.5.50.    | 4.D.1. Wetlands remaining wetlands                            | Table4     | Net CO <sub>2</sub><br>emissions/removals | 1991          | 1992          | 9 816.76       | 5 036.56       | -4 780.20         | kt CO <sub>2</sub> eq | -4 780.20                                 | -48.7                     | -4.3           |
| I.5.51.    | 4.E.2. Land converted to settlements                          | Table4     | Net CO <sub>2</sub><br>emissions/removals | 2017          | 2018          | 765.30         | 4 917.58       | 4 152.28          | kt CO <sub>2</sub> eq | 4 152.28                                  | 542.6                     | 3.5            |
| I.5.52.    | 4.F.2. Land converted to other land                           | Table4     | Net CO <sub>2</sub><br>emissions/removals | 2009          | 2010          | 2 250.86       | 662.61         | -1 588.26         | kt CO <sub>2</sub> eq | -1 588.26                                 | -70.6                     | -5.2           |
| I.5.53.    | 4.F.2. Land converted to other land                           | Table4     | N <sub>2</sub> O                          | 2009          | 2010          | 0.64           | 0.19           | -0.45             | kt                    | -120.51                                   | -70.6                     | -5.2           |
| I.5.54.    | 5.A.1. Managed waste disposal sites                           | Table5     | CH <sub>4</sub>                           | 2019          | 2020          | 61.09          | 52.25          | -8.84             | kt                    | -247.50                                   | -14.5                     | -3.2           |
| I.5.55.    | 5.A.2. Unmanaged waste disposal sites                         | Table5     | CH <sub>4</sub>                           | 1990          | 1991          | 273.61         | 282.37         | 8.76              | kt                    | 245.19                                    | 3.2                       | 3.5            |
| I.5.56.    | 5.D.1. Domestic wastewater                                    | Table5     | CH <sub>4</sub>                           | 2021          | 2022          | 171.38         | 142.12         | -29.26            | kt                    | -819.31                                   | -17.1                     | -3.7           |



Table I.6

**Comparison between implied emission factors reported for key categories and the range of implied emission factors from the 2025 national inventory reports of developed country Parties**

| <i>ID#</i> | <i>Category</i>                     | <i>CRT</i>    | <i>Gas</i>       | <i>Unit</i>                   | <i>IEF reported</i> | <i>Comparison</i> |
|------------|-------------------------------------|---------------|------------------|-------------------------------|---------------------|-------------------|
| I.6.1.     | 1.A.4. Other sectors – liquid fuels | Table1.A(a)s4 | CO <sub>2</sub>  | t/TJ                          | 66.367              | Below range       |
| I.6.2.     | 2.B.2. Nitric acid production       | Table2(I).A-H | N <sub>2</sub> O | t/t                           | 0.007               | Above range       |
| I.6.3.     | 3.A.4.h.i. Rabbit                   | Table3.A      | CH <sub>4</sub>  | kg CH <sub>4</sub> /head/year | 0.699               | Above range       |
| I.6.4.     | 3.A.4.h.iv. Fur-bearing animals     | Table3.A      | CH <sub>4</sub>  | kg CH <sub>4</sub> /head/year | 0.250               | Above range       |
| I.6.5.     | 3.B.1.a.i. Mature dairy cattle      | Table3.B(a)   | CH <sub>4</sub>  | kg CH <sub>4</sub> /head/year | 4.376               | Below range       |
| I.6.6.     | 3.D.1.a. Inorganic N fertilizers    | Table3.D      | N <sub>2</sub> O | kg N <sub>2</sub> O-N/kg N    | 0.000               | Below range       |

Table I.7

**Identification of new key categories**

| <i>ID#</i> | <i>New key category</i>  | <i>Gas</i>      | <i>Criteria</i> | <i>Inventory<br/>year</i> |
|------------|--|-----------------|-----------------|---------------------------|
| I.7.1.     | 1.B.2.a. Fugitive emissions from fuels – oil and natural gas – oil | CH <sub>4</sub> | Trend           | 2023                      |
| I.7.2.     | 2.A.1. Cement production   | CO <sub>2</sub> | Trend           | 2023                      |
| I.7.3.     | 2.B.1. Ammonia production  | CO <sub>2</sub> | Level           | 2023                      |
| I.7.4.     | 4.A.2. Land converted to forest land                               | CO <sub>2</sub> | Trend           | 2023                      |