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ANNEX V

GHG INVENTORIES INFORMATION

Part 1

Information to be included in the reports referred to in Article 26(3):

- (a) their anthropogenic emissions of GHGs listed in Part 2 of this Annex and the anthropogenic emissions of GHGs referred to in Article 2(1) of Regulation (EU) 2018/842 for the year X-2;
- (b) data on their anthropogenic emissions of carbon monoxide (CO), sulphur dioxide (SO₂), nitrogen oxides (NO_x) and volatile organic compounds, consistent with data already reported pursuant to Article 8 of Directive (EU) 2016/2284 for the year X-2;
- (c) their anthropogenic GHG emissions by sources and removals of CO₂ by sinks resulting from LULUCF, for the year X-2, in accordance with the methodologies specified in Part 3 of this Annex. This data shall also be relevant for the compliance report under Article 14 of Regulation (EU) 2018/841;
- (d) any changes to the information referred to in points (a), (b) and (c) for the years between the relevant base year or period and the year X-3, indicating the reasons for those changes;
- (e) information on indicators, as set out in Part 4 of this Annex, for the year X-2;
- (f) summary information on concluded transfers pursuant to Article 5 of Regulation (EU) 2018/842 and Articles 12 and 13 of Regulation (EU) 2018/841 for the year X-1;
- (g) information on the steps taken to improve inventory estimates, in particular in areas of the inventory that have been subject to adjustments or recommendations following expert reviews;
- (h) the actual or estimated allocation of the verified emissions reported by installation operators under Directive 2003/87/EC to the source categories of the national GHG inventory and the ratio of those verified emissions to the total reported GHG emissions in those source categories, for the year X-2;
- (i) where relevant, the results of the checks performed on the consistency of the emissions reported in the GHG inventories, for the year X-2, with the verified emissions reported under Directive 2003/87/EC;
- (j) where relevant, the results of the checks performed on the consistency of the data used to estimate emissions in preparation of the GHG inventories, for the year X-2, with:
 - (i) the data used to prepare inventories of air pollutants pursuant to Directive (EU) 2016/2284;
 - (ii) the data reported pursuant to Article 19(1) of, and Annex VII to, Regulation (EU) No 517/2014;
 - (iii) the energy data reported pursuant to Article 4 of, and Annex B to, Regulation (EC) No 1099/2008;
- (k) a description of changes to their national inventory system, if any;

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- (l) a description of changes to the national registry, if any;
- (m) information on their quality assurance and quality control plans, a general uncertainty assessment, a general assessment of completeness and, any other elements of the national GHG inventory report needed to prepare the Union GHG inventory report;
- (n) information of the Member State's intentions to make use of the flexibilities in Article 5(4) and (5) and Article 7(1) of Regulation (EU) 2018/842 and of the use of revenues under Article 5(6) of that Regulation.

A Member State may request to be granted a derogation by the Commission from point (c) of the first paragraph to apply a different methodology from that specified in Part 3 of this Annex where the methodology improvement required cannot be achieved in time for the improvement to be taken into account in the GHG inventories for the period from 2021 to 2030, or where the cost of the methodology improvement would be disproportionately high compared to the benefits of applying such methodology to improve accounting for emissions and removals due to the low significance of the emissions and removals from the carbon pools concerned. Member States wishing to benefit from this derogation shall submit a reasoned request to the Commission by 31 December 2020, indicating by which time the methodology improvement could be implemented, the alternative methodology proposed or both, and an assessment of the potential impacts on the accuracy of accounting. The Commission may request additional information to be submitted within a specific, reasonable time period. Where the Commission considers that the request is justified, it shall grant the derogation. If the Commission rejects the request, it shall give reasons for its decision.

Part 2

The GHGs to be covered are:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous Oxide (N₂O)
- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

Hydrofluorocarbons (HFCs):

- HFC-23 CHF₃
- HFC-32 CH₂F₂
- HFC-41 CH₃F
- HFC-125 CHF₂CF₃
- HFC-134 CHF₂CHF₂
- HFC-134a CH₂FCF₃
- HFC-143 CH₂FCHF₂
- HFC-143a CH₃CF₃
- HFC-152 CH₂FCH₂F
- HFC-152a CH₃CHF₂
- HFC-161 CH₃CH₂F
- HFC-227ea CF₃CHFCF₃
- HFC-236cb CF₃CF₂CH₂F
- HFC-236ea CF₃CHFCHF₂

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- HFC-236fa $\text{CF}_3\text{CH}_2\text{CF}_3$
- HFC-245fa $\text{CHF}_2\text{CH}_2\text{CF}_3$
- HFC-245ca $\text{CH}_2\text{FCF}_2\text{CHF}_2$
- HFC-365mfc $\text{CH}_3\text{CF}_2\text{CH}_2\text{CF}_3$
- HFC-43-10mee $\text{CF}_3\text{CHFCHFCF}_2\text{CF}_3$ or $(\text{C}_5\text{H}_2\text{F}_{10})$

Perfluorocarbons (PFCs):

- PFC-14, Perfluoromethane, CF_4
- PFC-116, Perfluoroethane, C_2F_6
- PFC-218, Perfluoropropane, C_3F_8
- PFC-318, Perfluorocyclobutane, $\text{c-C}_4\text{F}_8$
- Perfluorocyclopropane $\text{c-C}_3\text{F}_6$
- PFC-3-1-10, Perfluorobutane, C_4F_{10}
- PFC-4-1-12, Perfluoropentane, C_5F_{12}
- PFC-5-1-14, Perfluorohexane, C_6F_{14}
- PFC-9-1-18, $\text{C}_{10}\text{F}_{18}$

Part 3

Methodologies for monitoring and reporting in the LULUCF sector

Geographically explicit land-use conversion data in accordance with the 2006 IPCC Guidelines for national GHG inventories.

Tier 1 methodology in accordance with the 2006 IPCC guidelines for national GHG inventories.

For emissions and removals for a carbon pool that accounts for at least 25-30 % of emissions or removals in a source or sink category which is prioritised within a Member State's national inventory system because its estimate has a significant influence on a country's total inventory of GHGs in terms of the absolute level of emissions and removals, the trend in emissions and removals, or the uncertainty in emissions and removals in the land-use categories, at least Tier 2 methodology in accordance with the 2006 IPCC guidelines for national GHG inventories.

Member States are encouraged to apply Tier 3 methodology, in accordance with the 2006 IPCC guidelines for national GHG inventories.

Part 4

Inventory indicators

Indicator title	Indicator
TRANSFORMATION B0	Specific CO_2 emissions of public and auto-producer power plants, t/TJ CO_2 emissions from public and auto-producer thermal power stations, kt divided by all products — output by public and auto-producer thermal power stations, PJ

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TRANSFORMATION E0	Specific CO ₂ emissions of auto-producer plants t/TJ CO ₂ emissions from auto-producers, kt divided by All products output by auto-producer thermal power stations, PJ
INDUSTRY A1.1	Total CO ₂ intensity — iron and steel industry, t/million euro Total CO ₂ emissions from iron and steel, kt divided by gross value added — iron and steel industry
INDUSTRY A1.2	Energy-related CO ₂ intensity — chemical industry, t/million euro Energy-related CO ₂ emissions chemical industries, kt divided by gross value added — chemical industry
INDUSTRY A1.3	Energy-related CO ₂ intensity — glass, pottery and building materials industry, t/million euro Energy-related CO ₂ emissions glass, pottery and building materials, kt divided by gross value added — glass, pottery and buildings material industry
INDUSTRY A1.4	Energy-related CO ₂ intensity — food, drink and tobacco industry, t/million euro Energy-related CO ₂ emissions from food, drink and tobacco industry, kt divided by gross value-added — food, drink and tobacco industry, million euro (EC95)
INDUSTRY A1.5	Energy-related CO ₂ intensity — paper and printing industry, t/million euro Energy-related CO ₂ emissions paper and printing, kt — Gross value-added — paper and printing industry, million euro (EC95)
HOUSEHOLDS A0	Specific CO ₂ emissions of households for space heating, t/m ² CO ₂ emissions of households for space heating divided by surface area of permanently occupied dwellings, million m ²
SERVICES B0	Specific CO ₂ emissions of commercial and institutional sector for space heating, kg/m ² CO ₂ emissions from space heating in commercial and institutional, kt divided by Surface area of services buildings, million m ²
TRANSPORT B0	Specific diesel related CO ₂ emissions of passenger cars, g/100 km

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TRANSPORT B0

Specific petrol related CO₂ emissions of
passenger cars, g/100 km
