

ANNEX 5. Assessment of completeness and sources and sinks of greenhouse gas emissions and removals excluded.

Completeness of the Estonia's inventory submissions is evaluated here by sectors in tables below. The completeness is estimated by the gases (CO₂, N₂O, CH₄, F-gases and also NO_x, CO, NMVOC and SO₂) and emission sources according to the detailed CRF Reporter classification. The CRF Reporter tool *Completeness* under the menu Submission has been used.

Abbreviations used in tables:

X - Included in to the inventory
 NO - Not occurring in Estonia
 NA - Not available
 NE - Not estimated
 IE - Included elsewhere.

*Notes,

- if category reporting includes some national specific emission source, which is not required in IPCC guidelines
- other relevant issues.

Energy, Fuel combustion (CRF Reporter 1.A)

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NMVOC	SO ₂	Notes*
1. A. Fuel combustion activities								
1.A.A. Sectoral Approach								
1.AA.1.A. Energy industries								
1.AA.1.A. Public Electricity and Heat Production	X	X	X	X	X	X	X	
1.AA.1.B. Petroleum Refining*	NO	NO	NO	NO	NO	NO	NO	
1.AA.1.C. Manufacture of Solid Fuels and Other Energy Industries*	X	X	X	X	X	X	X	Shale Oil production in Estonia
1.AA.2. Manufacturing Industries and Construction								
1.AA.2.A. Iron and Steel*	X	X	X	X	X	X	X	There were no production of iron and steel products in 1991, 1992 and 1993.
1.AA.2.B. Non-Ferrous Metals*	X	X	X	X	X	X	X	There was no production of non-ferrous metals products in 1990-1999 and 2001.
1.AA.2.C. Chemicals	X	X	X	X	X	X	X	
1.AA.2.D. Pulp, Paper and Print*	X	X	X	X	X	X	X	There was no production of pulp and paper in 1990, 1991 and 1996
1.AA.2.E. Food Processing, Beverages and Tobacco	X	X	X	X	X	X	X	
1.AA.2.F. Other (please specify) Other manufacturing sectors and construction	X	X	X	X	X	X	X	
1.AA.3. Transport								
1.AA.3.A. Civil Aviation	X	X	X	X	X	X	X	

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NMVOC	SO ₂	Notes*
1.AA.3.B. Road Transportation	X	X	X	X	X	X	X	
1.AA.3.C. Railways	X	X	X	X	X	X	X	
1.AA.3.D. Navigation	X	X	X	X	X	X	X	
1.AA.4. Other Sectors								
1.AA.4.A. Commercial/ Institutional	X	X	X	X	X	X	X	
1.AA.4.B. Residential	X	X	X	X	X	X	X	
1.AA.4.C. Agriculture/Forestry/ Fisheries	X	X	X	X	X	X	X	
1.AA.5. Other (please specify)								
1.AA.5. A. Stationary	NO	NO	NO	NO	NO	NO	NO	
B. Mobile	X	X	X	X	X	X	X	

Energy, Fugitive emissions (CRF REPORTER 1.B)

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NMVOC	SO ₂	Notes*
1.B Fugitive emissions from fuels								
1.B.1. Solid fuels								
1.B.1.A. Coal Mining	NO	NO	NO	NO	NO	NO	NO	
1.B.1.B. Solid Fuel Transformation	NO	NO	NO	NO	NO	NO	NO	
1.B.1.C. Other (please specify)	NO	NO	NO	NO	NO	NO	NO	
1.B.2. Oil and Natural Gas								
1.B.2.A. Oil	NO	X	NO	X	X	X	X	CO ₂ emissions from Shale Oil production are included in Category 1.AA.1.C. Manufacture of Solid Fuel and Other Energy Industries
1.B.2.B. Natural Gas	NO	X	NO	X	X	X	X	
1.B.2.C. Venting and Flaring	NO	X	NO	X	X	X	X	
1.B.2.D. Other (please specify)	NO	NO	NO	NO	NO	NO	NO	

Industrial Processes (CRF Reporter 2)

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NMVOC	SO ₂	Notes*
2. Industrial processes								
2. A. Mineral products								
2.A.1. Cement Production	X	NO	NO	NO	NO	NO	X	
2.A.2. Lime Production	X	NO	NO	NO	NO	NO	NO	
2.A.3. Limestone and Dolomite Use	NE	NE	NE	NE	NE	NE	NE	Under investigation
2.A.4. Soda Ash Production and Use	NO	NO	NO	NO	NO	NO	NO	
2.A.5. Asphalt Roofing	NA	NO	NO	NO	NA	NA	NO	
2.A.6. Road Paving with Asphalt	NA	NO	NO	NA	NA	NA	NA	

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NM VOC	SO ₂	Notes*
2.A.7. Other								
2.A.7.1. Glass production	X	NO	NO	NO	NO	NO	NE	Under investigation
2. B. Chemical Industry								
2.B.1. Ammonia Production	X	NO	NO	NO	X	X	X	
2.B.2. Nitric Acid Production	NO	NO	NO	NO	NO	NO	NO	
2.B.3. Adipic Acid Production	NO	NO	NO	NO	NO	NO	NO	
2.B.4. Carbide Production	NO	NO	NO	NO	NO	NO	NO	
2.B.5. Other Production	NA	NA	NA	NA	NA	NA	NA	
2.C. Metal Production	NO	NO	NO	NO	NO	NO	NO	
1. Iron and Steel Production	NO	NO	NO	NE	NE	NE	NE	Under investigation
2. Ferroalloys Production	NO	NO	NO	NO	NO	NO	NO	
3. Aluminium Production	NO	NO	NO	NO	NO	NO	NO	
4. SF ₆ Used in Aluminium and Magnesium Foundries	NO	NO	NO	NO	NO	NO	NO	
5. Other (<i>please specify</i>)	NA	NA	NA	NA	NA	NA	NA	
2.D. Other Production								
1. Pulp and Paper	NO	NO	NO	X	X	X	X	There was no production of paper in 1994.
2. Food and Drink	NO	NO	NO	NO	NO	X	NO	
G. Other (please specify)								
	NO	NO	NO	NO	NO	NO	NO	

F-gases (CRF 2.F)

Greenhouse gas source and sink categories	HFC _s	PFC _s	SF ₆	Explanation notes
2. Industrial processes				
2.E. Production of Halocarbons and SF₆				
1. By-product Emissions	NO	NO	NO	There is no production of Halocarbons and SF ₆ in Estonia
Production of HCFC-22	NO	NO	NO	
Other	NO	NO	NO	
2.F. Consumption of Halocarbons and SF₆				
2.F.1. Refrigeration and Air Conditioning Equipment	X	NO	NO	
2.F.2. Foam Blowing	X	NO	NO	
2.F.3. Fire Extinguishers	X	NO	NO	
2.F.4. Aerosols/ Metered Dose Inhalers	X	NO	NO	
2.F.5 Solvents	NO	NO	NO	
2.F.6 Other applications using ODS substitutes	NO	NO	NO	
2.F.7 Semicunductors Manufacture	NO	NO	NO	
2.F.8 Electrical Equipment	NO	NO	X	
2.F.9 Other Electrical Equipment	NO	NO	X	
2.F.9 Other (sport shoe soles)	NO	X	NO	

Agriculture (CRF 4)

Greenhouse gas source and sink categories	CH ₄	N ₂ O	NO	CO	NMVOC	SO ₂	Notes*
4.A. Enteric Fermentation	X	NO	NO	NO	NO	NO	
4.B. Manure Management	X	X	NO	NO	NO	NO	
4.C. Rice Cultivation	NO	NO	NO	NO	NO	NO	
4.D. Agricultural soils							
4.D.1. Direct Soil Emissions							
4.D.1.1. Synthetic Fertilizers	NO	X	NO	NO	NO	NO	
4.D.1.2. Animal Manure Applied to Soils	NO	X	NO	NO	NO	NO	
4.D.1.3. N-fixing Crops	NO	X	NO	NO	NO	NO	
4.D.1.4. Crop Residue	NO	X	NO	NO	NO	NO	
4.D.1.5. Cultivation of Histosols	NO	X	NO	NO	NO	NO	
4.D.1.6. Other emissions	NO	X	NO	NO	NO	NO	
4.D.2. Pasture, Range and Paddock Manure	NO	X	NO	NO	NO	NO	
4.D.3. Indirect Emissions							
4.D.3.1. Atmospheric Deposition	NO	X	NO	NO	NO	NO	
4.D.3.2. Nitrogen Leaching and Run-off	NO	X	NO	NO	NO	NO	
4.D.4. Other	NO	NO	NO	NO	NO	NO	
4.E. Prescribed Burning of Savannas	NO	NO	NO	NO	NO	NO	
4.F. Field Burning of Agricultural Residues	X	X	X	X	NO	NO	

LULUCF (CRF 5)

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NMVOC	Notes*
5.A. Forest Land							
Carbon stock change							
5(I) Direct N ₂ O emissions from N fertilization	NO	NO	NO	NO	NO	NO	
5(II) Non-CO ₂ emissions from drainage of soils and wetlands	NE	NE	NE	NO	NO	NO	
5(V) Biomass burning	X	X	X	NO	NO	NO	
5.A.1. Forest Land remaining Forest Land							
Carbon stock change	X	NO	NO	NO	NO	NO	
5(I) Direct N ₂ O emissions from N fertilization	NO	NO	NO	NO	NO	NO	
5(II) Non-CO ₂ emissions from drainage of soils and wetlands	NO	NE	NE	NO	NO	NO	
5(V) Biomass burning	X	X	X	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section

5.A.2. Land converted to Forest Land							Not all data requested were available to perform a complete GHG inventory in this sub-section
5.A.2.1. Cropland converted to Forest Land	X	NO	NO	NO	NO	NO	
5.A.2.2. Grassland converted to Forest Land	NE	NO	NO	NO	NO	NO	
5.A.2.3. Wetlands converted to Forest Land	NE	NO	NO	NO	NO	NO	
5.A.2.4. Settlements converted to Forest Land	NE	NO	NO	NO	NO	NO	
5.A.2.5. Other Land converted to Forest Land	NE	NO	NO	NO	NO	NO	
5.B. Cropland							
Carbon stock change	X	NO	NO	NO	NO	NO	
5(III) N ₂ O emissions from disturbances associated with land-use conversion to cropland	NO	NO	NE	NO	NO	NO	
5(IV) CO ₂ emissions from agricultural lime application	X	NO	NO	NO	NO	NO	
5(V) Biomass burning	NE	NE	NE	NO	NO	NO	
5.B.1. Cropland remaining Cropland							Not all data requested were available to perform a complete GHG inventory in this sub-section
Carbon Stock Change	NE	NO	NO	NO	NO	NO	
Biomass Burning	NE	NE	NE	NO	NO	NO	
5.B.2. Land converted to Cropland							Not all data requested were available to perform a complete GHG inventory in this sub-section
5.B.2.1. Forest Land Converted to Cropland	NE	NO	NO	NO	NO	NO	
5.B.2.2. Grassland converted to Cropland	NE	NO	NO	NO	NO	NO	
5.B.2.3. Wetlands converted to Cropland	NE	NO	NO	NO	NO	NO	
5.B.2.3. Settlements converted to Cropland	NE	NO	NO	NO	NO	NO	
5.B.2.4. Other land converted to Cropland	NE	NO	NO	NO	NO	NO	
5(III) N ₂ O emissions from disturbances associated with land-use conversion to cropland							Not all data requested were available to perform a complete GHG inventory in this sub-section
5.B.2.1. Forest Land Converted to Cropland	NO	NO	NE	NO	NO	NO	
5.B.2.2. Grassland converted to Cropland	NO	NO	NE	NO	NO	NO	
5.B.2.3. Wetlands converted to Cropland	NO	NO	NE	NO	NO	NO	
5.B.2.4. Settlements converted to Cropland	NO	NO	NE	NO	NO	NO	
5.B.2.3. Other land converted to Cropland	NO	NO	NE	NO	NO	NO	
Biomass Burning	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.B.2.1. Forest land converted to Cropland	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.C. Grassland							

Carbon Stock Change	X	NO	NO	NO	NO	NO	
5(IV) Carbon emissions from agricultural lime application	NO	NO	NO	NO	NO	NO	
5(V) Biomass Burning	NE	NE	NE	NO	NO	NO	
5.C.1. Grassland remaining Grassland	NE	NO	NO	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5(IV) CO ₂ emissions from agricultural lime application	NE	NO	NO	NO	NO	NO	
5 (V) Biomass Burning	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.C.2. Land converted to Grassland							Not all data requested were available to perform a complete GHG inventory in this sub-section
5.C.2.1. Forest Land Converted to Grassland	NE	NO	NO	NO	NO	NO	
5.C.2.2. Cropland converted to Grassland	X	NO	NO	NO	NO	NO	
5.C.2.3. Wetlands converted to Grassland	NE	NO	NO	NO	NO	NO	
5.C.2.4. Settlements converted to Grassland	NE	NO	NO	NO	NO	NO	
5.C.2.5. Other land converted to Grassland	NE	NO	NO	NO	NO	NO	
5(V) Biomass Burning	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.C.2.1. Forest land converted to Grassland	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.D. Wetlands							
Carbon Stock Change	X	NO	NO	NO	NO	NO	
5(II) N ₂ O emissions from drainage of soils and wetlands	NO	NE	NE	NO	NO	NO	
5(V) Biomass Burning	NE	NE	NE	NO	NO	NO	
5.D.1. Wetlands remaining Wetlands							
Carbon Stock Change	X	NO	NO	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
Biomass Burning	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.D.2. Land converted to Wetlands							Not all data requested were available to perform a complete GHG inventory in this sub-section
5.D.2.1. Forest Land Converted to Wetlands	NE	NO	NO	NO	NO	NO	
5.D.2.2. Grassland converted to Wetlands	NE	NO	NO	NO	NO	NO	
5.D.2.3. Wetlands converted to Wetlands	NE	NO	NO	NO	NO	NO	
5.D.2.4. Settlements converted to Wetlands	NE	NO	NO	NO	NO	NO	

5.D.2.5. Other land converted to Wetlands	NE	NO	NO	NO	NO	NO	
5(II) Non-CO ₂ emissions from drainage of soils and wetlands	NO	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5(V) Biomass Burning							
5.D.2.1. Forest land converted to Wetlands	NE	NE	NE	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.E. Settlements							
5.E.1. Settlements remaining Settlements	NE	NO	NO	NO	NO	NO	Not all data requested were available to perform a complete GHG inventory in this sub-section
5.E.2. Land converted to Settlements							Not all data requested were available to perform a complete GHG inventory in this sub-section
5.E.2.1. Forest Land Converted to Settlements	NE	NO	NO	NO	NO	NO	
5.E.2.2. Cropland converted to Settlements	NE	NO	NO	NO	NO	NO	
5.E.2.3. Grassland converted to Settlements	NE	NO	NO	NO	NO	NO	
5.E.2.4. Wetlands converted to Settlements	NE	NO	NO	NO	NO	NO	
5.E.2.5. Other land converted to Settlements	NE	NO	NO	NO	NO	NO	
5.F. Other Land	NE	NE	NE	NO	NO	NO	
5.G. Other Land (please specify)							
Harvested Wood Products	IE	IE	NE	NO	NO	NO	Estonian inventory on LULUCF considers the total biomass associated with the volume of the extracted roundwood as an immediate emission Emission from Harvested Wood Products was added to the total amount of CH ₄ emission from waste transferred to landfill

Waste (CRF 6)

Greenhouse gas source and sink categories	CO ₂	CH ₄	N ₂ O	NO _x	CO	NM VOC	Notes*
6.A. Solid Waste Disposal on Land							
6.A.1. Managed Waste Disposal on Land	NE	X	NO	NE	NO	NO	
6.A.2. Unmanaged Waste Disposal Sites							
6.A.2.1. deep (>5 m)	NO	NO	NO	NO	NO	NO	
6.A.2.2. shallow (< 5m)	NO	NO	NO	NO	NO	NO	
6.A.3. Other	NO	NO	NO	NO	NO	NO	
6.B. Wastewater handing							
6.B.1. Industrial Wastewater							Not all data requested were available to perform a complete GHG inventory in this sub-section

Wastewater	NO	NO	NO	NO	NO	NO	
Sludge	NO	IE	NE	NO	NO	NO	The emission of CH ₄ from sludge was not carried out as the amount of sludge was added to the total amount of waste transferred to landfill.
6.B.2. Domestic and Commercial Wastewater							
6.B.2.1. Domestic and Commercial Wastewater							
Wastewater	NO	X	NO	NO	NO	NO	
Sludge	NO	IE	NE	NO	NO	NO	The emission of CH ₄ from sludge was not carried out as the amount of sludge was added to the total amount of waste transferred to landfill.
6.B.2.2. Human Sewage	NO	NO	X	NO	NO	NO	
6.C. Waste Incineration							
6.C.1. Biogenic	NE	NE	NE	NO	NO	NO	As no wastes were burnt on land in Estonia in 2008, no estimations were carried out.
6.C.2. Other	NO	NO	NO	NO	NO	NO	
6.D. Other	NO	NO	NO	NO	NO	NO	