ANNEXES

to the

Proposal for a
REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry into the 2030 climate and energy framework and amending Regulation No 525/2013 of the European Parliament and the Council on a mechanism for monitoring and reporting greenhouse gas emissions and other information relevant to climate change

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Annex I: Greenhouse gases and carbon pools

A. Greenhouse gases pursuant to Article 2:

(a)   carbon dioxide (CO_2);

(b)   methane (CH_4);

(c)   nitrous oxide (N_2O)

expressed in terms of tonnes of CO_2 equivalent determined pursuant to Regulation (EU) No 525/2013.

B. Carbon pools pursuant to Article 5(4):

(a)   above-ground biomass;

(b)   below-ground biomass;

(c)   litter;

(d)   dead wood;

(e)   soil organic carbon;

(f)   for afforested land and managed forest land: harvested wood products.

Annex II: Minimum values for area size, tree crown cover and tree height and forest reference levels

Minimum values for area size, tree crown cover and tree height			
Member State	**Area (ha)**	**Tree crown cover (%)**	**Tree height (m)**
Belgium	0,5	20	5
Bulgaria	0,1	10	5
Croatia	0,1	10	2
Czech Republic	0,05	30	2
Denmark	0,5	10	5
Germany	0,1	10	5
Estonia	0,5	30	2
Ireland	0,1	20	5
Greece	0,3	25	2
Spain	1,0	20	3
France	0,5	10	5
Italy	0,5	10	5
Cyprus			

Latvia	0,1	20	5
Lithuania	0,1	30	5
Luxembourg	0,5	10	5
Hungary	0,5	30	5
Malta			
Netherlands	0,5	20	5
Austria	0,05	30	2
Poland	0,1	10	2
Portugal	1,0	10	5
Romania	0,25	10	5
Slovenia	0,25	30	2
Slovakia	0,3	20	5
Finland	0,5	10	5
Sweden	0,5	10	5
United Kingdom	0,1	20	2

Member State forest reference levels including harvested wood products	
Member State	Gg carbon dioxide (CO_2) equivalents per year
Belgium	–2 499
Bulgaria	–7 950
Croatia	–6 289
Czech Republic	–4 686
Denmark	409
Germany	–22 418
Estonia	–2 741
Ireland	–142
Greece	–1 830
Spain	–23 100
France	–67 410
Italy	–22 166
Cyprus	–157
Latvia	–16 302
Lithuania	–4 552
Luxembourg	–418
Hungary	–1 000
Malta	–49
Netherlands	–1 425
Austria	–6 516
Poland	–27 133
Portugal	–6 830
Romania	–15 793
Slovenia	–3 171
Slovakia	–1 084
Finland	–20 466
Sweden	–41 336
United Kingdom	–8 268

**Annex III: Base years for the purposes of calculating
the cap pursuant to Article 8(2)**

Member State	Base Year
Belgium	1990
Bulgaria	1988
Croatia	1990
Czech Republic	1990
Denmark	1990
Germany	1990
Estonia	1990
Ireland	1990
Greece	1990
Spain	1990
France	1990
Italy	1990
Cyprus	
Latvia	1990
Lithuania	1990
Luxembourg	1990
Hungary	1985-87
Malta	
Netherlands	1990
Austria	1990
Poland	1988
Portugal	1990
Romania	1989
Slovenia	1986
Slovakia	1990
Finland	1990
Sweden	1990
United Kingdom	1990

Annex IV: National forestry accounting plan containing a Member State's updated forest reference level

A. Criteria for determining forest reference levels

Member State forest reference levels shall be determined in accordance with the following criteria:

(a)   Reference levels shall be consistent with the goal of achieving a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century;

(b)   Reference levels shall ensure that the mere presence of carbon stocks is excluded from accounting;

(c)   Reference levels should ensure a robust and credible accounting, to guarantee that emissions and removals resulting from biomass use are properly accounted for;

(d)   Reference levels shall include the carbon pool of harvested wood products, providing a comparison between assuming instantaneous oxidation and applying the first-order decay function and half-life values;

(e)   Reference levels should take into account the objective of contributing to the conservation of biodiversity and the sustainable use of natural resources, as set out in the EU Forest Strategy, Member States' national forest policies, and the EU Biodiversity Strategy;

(f)   Reference levels shall be consistent with the national projections of anthropogenic greenhouse gas emissions by sources and removals by sinks reported under Regulation (EU) No 525/2013;

(g)   Reference levels shall be consistent with greenhouse gas inventories and relevant historical data and shall be based on transparent, complete, consistent, comparable and accurate information. In particular, the model used to construct the reference level shall be able to reproduce historical data from the national greenhouse gas inventory.

B. Elements of the national forestry accounting plan

The national forestry accounting plan submitted pursuant to Article 8 of this Regulation shall contain the following elements:

(a)   A general description of the construction of the reference level and a description on how the criteria in this Regulation were taken into account;

(b)   Identification of the carbon pools and greenhouse gases which have been included in the reference level, reasons for omitting a carbon pool from the reference level construction, and demonstration of the consistency between the pools included in the reference level;

(c)   A description of approaches, methods and models, including quantitative information, used in the construction of the reference level, consistent with the most recently submitted national inventory report and documentary information on forest management practice and intensity;

(d)   A description of how stakeholders were consulted and how their views have been taken into account;

(e)   Information on how harvesting rates are expected to develop under different policy scenarios;

(f)   A description of how each of the following elements were considered in the construction of the reference level:

   (1)   Area under forest management;

   (2)   Emissions and removals from forests and harvested wood products as shown in greenhouse gas inventories and relevant historical data,

   (3)   Forest characteristics, including age-class structure, increments, rotation length and other information on forest management activities under 'business as usual';

   (4)   Historical and future harvesting rates disaggregated between energy and non-energy uses.

Annex V: First order decay function and default half-life values for harvested wood products

Methodological issues

–   If it is not possible to differentiate between harvested wood products on afforested land and on managed forest land, a Member State may choose to account for harvested wood products assuming that all emissions and removals occurred on managed forest land.

–   Harvested wood products in solid waste disposal sites and harvested wood products that were harvested for energy purposes shall be accounted for on the basis of instantaneous oxidation.

–   Imported harvested wood products, irrespective of their origin, are not accounted for by the importing Member State ("production approach").

–   For exported harvested wood products, country-specific data refers to country-specific half-life values and harvested wood products usage in the importing country.

–   Country-specific half-life values for harvested wood products placed on the market in the Union should not deviate from those used by the importing Member State .

–   Member States may, for information purposes only, provide in their submission data on the share of wood used for energy purposes that was imported from outside the Union, and the countries of origin for such wood.

Member States may use country-specific methodologies and half-life values instead of the methodologies and default half-life values specified in this Annex, provided that those methodologies and values are determined on the basis of transparent and verifiable data and that the methods used are at least as detailed and accurate as those specified in this Annex.

First order decay function starting with i = 1900 and continuing to present year:

(a)

$$C(i + 1) = e^{-k} \cdot C(i) + \left(\frac{(i - e^{-k})}{k}\right) \cdot Inflow(i)$$

with $C(1900) = 0.0$

(b)

$$\Delta C(i) = C(i + 1) - C(i)$$

where:

i = year

$C(i)$ = the carbon stock of the harvested wood products pool in the beginning of year i, in $Gg\ C$

k = decay constant of first-order decay given in units of year-1 ($k = \ln(2)/HL$, where HL is half-life of the harvested wood products pool in years.)

$Inflow(i)$ = the inflow to the harvested wood products pool during year i, Gg C year-1

$\Delta C(i)$ = carbon stock change of the harvested wood products pool during year i, Gg C year-1,

Default half-life values:

Half-life value means the number of years it takes for the quantity of carbon stored in a harvested wood products category to decrease to one half of its initial value. Default half-life values (HL):

(a) 2 years for paper

(b) 25 years for wood panels

(c) 35 years for sawn wood.

Member States may supplement those categories with information on bark, provided that the available data is transparent and verifiable. Member States may also use country-specific sub-categories of any of those categories.

Annex VI: Calculation of background levels for natural disturbances

1. For the calculation of the background level, the following information shall be provided:

(a)   historic levels of emissions caused by natural disturbances;

(b)   the type(s) of natural disturbance included in the estimation;

(c)   total annual emissions estimations for those natural disturbance types for the period 2001-2020, listed by land accounting categories;

(d)   demonstration of the time series consistency in all relevant parameters, including minimum area, emission estimation methodologies, coverages of pools and gases.

2. The background level is calculated as the average of the 2001-2020 time series excluding all years where abnormal levels of emissions were recorded, i.e. excluding all statistical outliers. The identification of statistical outliers shall happen as follows:

(a)   calculate the arithmetic average value and the standard deviation of the full time series 2001-2020;

(b)   exclude from the time series all years where the annual emissions are outside twice the standard deviation around the average;

(c)   calculate again the arithmetic average value and the standard deviation of the time series 2001-2020 minus the years excluded in (b);

(d)   repeat (b) and (c) until no outliers can be identified.

3. After calculating the background level pursuant to point 2 of this Annex, if emissions in a particular year in the periods from 2021 to 2025 and from 2026 to 2030 exceed the background level plus a margin, the amount of emissions exceeding the background level may be excluded in accordance with Article 10. The margin shall be equal to a probability level of 95%.

4.   The following emissions cannot be excluded:

(a)   emissions resulting from harvesting and salvage logging activities that took place on those lands following the occurrence of the natural disturbances;

(b)   emissions resulting from prescribed burning that took place on those lands in that particular year of the period from 2021 to 2025 or from 2026 to 2030 ;

(c)   emissions on lands that were subject to deforestation following the occurrence of natural disturbances.

5.   Information requirements pursuant to Article 10(2) include the following:

(a)   identification of all land areas affected by natural disturbances in that particular year, including their geographical location, the period and types of natural disturbances;

(b)   evidence that no deforestation has occurred during the rest of the period from 2021 to 2025 or from 2026 to 2030 on lands that were affected by natural disturbances and in respect of which emissions were excluded from accounting;

(c)   description of verifiable methods and criteria to be used to identify deforestation on those lands in the subsequent years of the period from 2021 to 2025 or from 2026 to 2030 ;

(d)   where feasible, description of measures the Member State undertook to prevent or limit the impact of those natural disturbances;

(e)   where feasible, description of measures the Member State undertook to rehabilitate the lands affected by those natural disturbances.