$$C_{CO_2}(t) = k_{CO_2} \int_{-\infty}^{t} E_{CO_2}(t') \cdot \left[f_{CO2,0} + \sum_{S=1}^{n} f_{CO2,S} \cdot e^{\left(-\frac{t-t'}{\tau_{CO2,S}}\right)} \right]_F dt'$$

Where:

C_{CO2} (t) = Atmospheric mass loading of a CO_2-type GHG or residual fraction of a type x GHG flow, in metric tonne CO_2 equivalent, as a function of period *t*;

τ = concentration;

k_{CO2}= 0.47 ppmv/GtC, to be added only to adjust the result;

E_{CO2}= Emissions of CO_2 in metric tonnes;

$\tau_{CO2,S}$= Exponential atmospheric degradation time of the S^{th} fraction of the additional concentration (τ1 = 394.4; τ2 = 36.54; τ3 = 4.304);

$f_{CO2,0}$= First fraction (0.2173);

$f_{CO2,S}$= Respective fractions (0.224; 0.2824; 0.2763).