

1. Introduction

Controlling our CO₂ emissions is a major stake in our future. Such control should manifest itself as much in a reduction of our emissions as in a change in the nature of these emissions.

2. The short and long carbon cycle: what is the difference?

To better understand the nature of what is at stake, here are a few explanations concerning the phenomena currently competing in nature.



Leaves that fall from the trees in autumn emit CO₂ as they biodegrade, which was absorbed the previous spring by the tree in order to grow and produce its leaves.

This cycle of emission and absorption of CO₂ has been ongoing since time immemorial

and has very little effect on the average level of CO₂ in the atmosphere.

The “C” in CO₂ stands for carbon, and here we talk about **young** or **contemporary** carbon.

By contrast, all CO₂ emitted through the combustion of fossil resources (e.g. petrol, gas and plastics) always results in an increase in the average quantity of CO₂ as it is not compensated by an increase in our planet’s capacity to absorb this CO₂ excess.

It is this systematic and continuous increase that poses the problem. It is therefore a very long cycle, as millions of years go by between the absorption and emission of the CO₂. This carbon is called **old** or **fossil** carbon.

3. How do biomaterials fit into this story?

For several years now, many companies have been marketing biomaterials manufactured partially or wholly from young carbon of plant origins.

The CO₂ produced at the end of the biomaterial’s life (by biodegradation or burning) corresponds to that

absorbed by the plants of which the biomaterial is made.

The cycle is still short, even if it can span over several years, being the time it takes for the biomaterial to fulfil its function (as a bag, cover, or car or washing machine component) and then be destroyed.

4. Major clean-up of the numerous declarations

Various standards lead to a multitude of declarations that are difficult to compare.

To remedy this situation, TÜV AUSTRIA has developed an evaluation tool that makes it possible to determine in a harmonised, precise and reproducible way the share of **young** and **old** carbon.

This works both for base materials and for finished products.

5. The OK biobased logo: TÜV AUSTRIA’s clear and simple message

While precise values, printed on a certificate, are indispensable in business-to-business (B2B) relations, the general public needs a clear message that is easily understood.

This business-to-consumer (B2C) communication relies on a four-star logo.



The more stars, the higher the content of young carbon. In certain cases, the biobased percentage may be attached.

6. The OK biobased certificate: TÜV AUSTRIA’s clear & simple approach

The evaluation of base materials is carried out by a series of analyses aimed at determining the share of young carbon and of carbon.

The evaluation of finished products using certified base materials is calculated and validated by a confirmation method.

