

# Sustainability Certification

With reference to *Mass Balance, Book and Claim* etc.

## Mass balance and minimum share?

## Response to comments\* by ISCC PLUS and RSB

Comment by Michael Carus, nova-Institute

First of all I very much appreciate that we can discuss these complex topics in bioplastics MAGAZINE from different points of view and thus make them accessible to a broader readership.

In the discussion, we should clearly differentiate between *mass balance* and *mass balance approach*. *Mass balance* simply means the relationship between input and output of a specific substance within a system, in which the output from the system cannot exceed the input into the system. Or as Jan Henke (ISCC PLUS) wrote for our specific case: "The certified sustainable output volume can never exceed the equivalent amount of certified feedstock".

Coming from this definition it is obvious that the *mass balance* creates a higher transparency and safety in certification schemes than *book-and-claim*, which strictly speaking is not a defined method for the registration of the biomass flow at all. Therefore RSB should allow *book-and-claim* really only in the start-up phase.

The so-called *mass balance approach* goes one step further: it allows the free allocation of the biomass feedstock fed into the plant — or, as Jan Henke (ISCC PLUS) writes: "A mass balance approach would enable a company to allocate the bio content to a specific product". This allocation leaves the ground of science and technology (on which *mass balance* is clearly based) and opens the door for allocation purely based on marketing aspects. Basically biomass can be dedicated to products that never contain any biomass at all. Even if this could offer incentives for the chemical industry to apply more biomass, it poses a considerable risk of damaging the image of the whole biobased economy (*Green washing* or *Biobased washing*).

Certainly, should the *mass balance approach* succeed in being established, companies that use special biomass for their specific biobased processes would be on a par with those that use low-grade biomass in rarely modified petrochemical plants... Is this the desired bio-economy then?

So it is only half the truth that Jan Henke (ISCC PLUS) writes about the use of biobased resources in the chemical sector: "In the beginning it is only possible with low physical shares in the final product". This is only true for the huge petrochemical integrated sites "using thousands of tons of fossil and non-sustainable feedstock", they really cannot "switch from one day to the other to certified sustainable bio based input".

So far however, the biobased economy, especially in the area of chemistry and polymers, is driven by innovative companies, which from the very beginning use high amounts of biomass. Especially these new developments and investments, that in fact constitute the biobased economy, use new process routes and/or produce new building-blocks and polymers, that always display high amounts of biomass, because they were exactly designed for this. These are companies such as Naturworks (PLA: new process routes / new polymer) or Braskem (Bio-PE: new process).

Especially industrial biotechnology that opens completely new process routes, and stands in the focus of the EU-research, is naturally working with high amounts of biomass.

The core aim of the *mass balance approach* is to open the huge petrochemical plants for biomass.

Let us finally come back to the topic of *labelling*. Should (in connection with a *Sustainability Certification*) the amount of used biomass or the real biobased content of a product be mentioned (as suggested by nova institute) or not (as suggested by ISCC PLUS)? Or is the approach of RSB the better way, as proposed by Melanie Williams (RSB): "RSB has set a requirement for a minimum of 25% biobased content. This requirement specifies that the annual, average biobased content, measured according to ASTM D6866, CEN/TS 16137 (or any equivalent protocol) shall not be less than 25% by weight".

I like the idea of an "annual, average biobased content" because this can be a bridge to the huge petrochemical sites to work with. But I would not agree to a minimum content of 25%. Why? Because it is extremely dependant on the specific application! In some cases 80% biobased share is easy to achieve and other cases 10% is already a huge challenge (and the biomass used should also be sustainable). From our point of view, we don't need any minimum, we need transparency! Every industrial and public customer shall learn about the biobased share of the product and whether this share is certified sustainable or not.

\*: cf. *bioplastics MAGAZINE* 04/2014

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## Comparing apples with apples

Comment by Philippe Dewolfs, Vinçotte / OK biobased (Belgium)

When I buy an organically produced apple I want it to be the genuine article, particularly when it features the logo of an independent organisation.

I am expecting more than a declaration claiming that 50% of the total production of that farmer is organic, obliging me to ask (and decide ?) myself whether the apple I am holding is 50% organic, 100% organic, or not organic at all?

The same applies to bio-based products. Manufacturers are not allowed to tell final consumers that the cups they are thinking of buying are 50 % bio-based if that is not actually the case.

Except that unlike an apple's origin the bio-based carbon content of a cup may be easily verified.

Standardisation activities in Europe are developed with this in mind. In charge of communication and certification, the TC 411's (Technical Group 411) WG5 (Working Group 5) on "bio-based products" has decided to make a distinction between B2B communication and communication intended for final consumers.

In the case of B2B communication, a mass-balance based declaration is allowed, as it is indicative of a company's efforts to switch to organic sources.

However, any claim in a B2C communication has to be verifiable (and therefore measurable) in the finished product. Hence the mass balance approach is not acceptable in this case because the specific values of a given item may vary considerably depending on the country, the factory or even the date of manufacture.

By opting for the C14 (ASTM D6866 in 2009, which then became CEN/TS 16137) method, Vinçotte has chosen a precise method that can be replicated, in keeping with the organisation's reputation as a leading certifier of bioplastics.

The approach allows all entities (whether they are major international companies or small local businesses) to have their products certified on the basis of a reliable and affordable method.

All products may be certified OK biobased, provided the carbon accounts for at least 30% of the finished product's weight and the carbon is at least 20% bio-based.

The product will then be assigned 1 to 4 stars depending on the bio-based carbon level.

The development of the biobased economy is dependent on the availability of a reliable declaration method that is affordable to all market participants.

100% organic?  
50 % organic??  
Hää ???



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