Developing standards for bio-based industries

Standards play a crucial role in supporting the growth of the bio-based products market. They can help to increase market transparency by providing common reference methods and requirements that enable the verification of claims and certification regarding the bio-based content, biodegradability or environmental sustainability of different products. However, inadequate standards can also act as barriers for certain products. So, what are the current EU standards or other related issues that hamper the growth of bio-based products? The EU funded STAR4BBI project has analysed these barriers and proposed actions towards overcoming these.

During the desk research as well as interviews with industry, several issues related to standards and certificates in the bio-based industry were identified. The STAR4BBI project carried out a workshop to discuss a long list of the issues with the participants from the industry, associations, certification bodies, test houses and the European Commission. Considering the feedback received from the participants of the workshop and the urgency of the issues presented by them, STAR4BBI project partners will focus on drafting solutions for the following three issues:

Non-functional specifications

For many years, standards have been developed to evaluate the characteristics of materials to demonstrate their fitness for purpose whereas it would be more appropriate to evaluate the functionality of materials or products on the requirements of the application. For bio-based products to demonstrate their fitness for purpose they must comply with tests based upon these standards. An example of such standards that are applicable in the bio-based industry are climate tests, which ensure that the product is fit to various environmental conditions while it is being shipped. The conditions for these climate tests are however not based upon actual transportation situations and are not representative for real life situations. For instance, a climate test has been developed for fossil-based products, considering that plastic is 100% resistant to relative humidity, which is never the actual environment. Bio-based products sometimes have the challenge of not passing this test due to their hydrophilic nature, whereas they meet all real requirements for the application.

Compostability (EN 13432)

The specific conditions for compostability are described in standards, such as the European standard on industrial composting EN 13432. The standard sets requirements for the rate of biodegradation (min. 90% to be broken down to CO₂ within six months at 58°C +/- 2°C),
disintegration, chemical composition and quality of compost. The general opinion is that when
the characteristics of bio-based plastics are in line with the EN 13432 standard, they can be
composted by industrial composters without complications. However, composters on the other
hand run composting installations in less time that the described 12 weeks. The Dutch Waste
Management Association (VA) states that composting time is around 2-3 weeks. At some
composting installations the composting time is even shorter: between 5 and 18 days. This
results in bio-based products producers developing their materials to comply with EN 13432
standard, whilst their product is not accepted by industrial composters.

Double testing
When products cross borders, sometimes testing needs to be performed to guarantee national
or regional safety requirements. Private parties in different countries may also request certain
safety requirements compliance. Usually, these compliance tests are based on the same
standards as in the “home” country. In practise this often comes down to performing the same
or similar tests on products twice. The costs of these tests are in most cases covered by the
producer. “Double” testing is costly as well as time consuming. Although, this is not a barrier
only limited to bio-based products but also applies to non-bio-based products, bio-based
product producers are usually not multinationals. The costs of testing are relatively high for
smaller companies that enter a new market.

To deal with the identified issues, the responsible CEN, ISO or ASTM committees will be
identified and contacted. In case the project partners do not have direct influence on the
responsible CEN or ISO committees, “Industry champions” will be identified to propose the
amendments to the standards to the technical committees.

Contact:
Minique Vrins
STAR4BBI Work package Co-ordinator
Netherlands Standardisation Institute NEN
Email: energy@nen.nl
Tel: +31 (0) 15 26 90 326
www.biobasedeconomy.eu/projects/star4bbi/

STAR4BBI is an EU funded project focusing on Standards and Regulations for the Bio-based
Industry. The project has started on September 2016 with the duration of 36 months. It is led
by the Netherlands Standardisation Institute NEN and comprises the consortium members
nova-Institute, TU Berlin and Wageningen Food & Biobased Research.

The project is funded from the Bio Based Industries Joint Undertaking under the European
Union’s Horizon 2020 research and innovation programme under grant agreement No 720685.
Responsible for the content under German press law (V.i.S.d.P.):

Dipl.-Phys. Michael Carus (Managing Director)
nova-Institut GmbH, Chemiepark Knapsack, Industriestraße 300, DE-50354 Hürth (Germany)

Internet: [www.nova-institute.eu](http://www.nova-institute.eu) – all services and studies at [www.bio-based.eu](http://www.bio-based.eu)
Email: [contact@nova-institut.de](mailto:contact@nova-institut.de)
Phone: +49 (0) 22 33-48 14 40

nova-Institute is a private and independent research institute, founded in 1994; nova offers research and consultancy with a focus on bio-based and CO₂-based economy in the fields of food and feedstock, techno-economic evaluation, markets, sustainability, dissemination, B2B communication and policy. Every year, nova organises several large conferences on these topics; nova-Institute has 30 employees and an annual turnover of more than 3 million €.

Get the latest news from nova-Institute, subscribe at [www.bio-based.eu/email](http://www.bio-based.eu/email)