

## Corporate Innovation Challenge Template

<b>Challenge Name: Renewable Carbon Monomers for NIPU</b>
<b>Code Name: BIOECONOMYVENTURES-2022-OC2-ST_1</b>
<p><b>Challenge Domain:</b></p> <ul style="list-style-type: none"> <li>• Platform and Specialty Bio-based Chemicals</li> <li>• Bio-based Plastics and Materials</li> <li>• Bio-based Paints &amp; Industrial Coatings</li> </ul>
<b>Description of the Corporate innovation Challenge</b>
<p>Polyurethanes are a family of polymers produced on an annual &gt;25million ton scale and used in a wide range of applications from insulation foams through to flexible coatings. They are produced by reacting isocyanates with polymeric diols (polyols). Isocyanates are a toxic and highly reactive group of chemicals that requires special handling, and are under scrutiny from health and regulatory bodies. However there is a class of polyurethanes that are made without the need to use isocyanates - so-called Non-Isocyanate Polyurethanes (NIPU's). In addition to the improved health and safety aspects, NIPU's provide the possibility to use non-fossil (or renewable carbon) derived monomers such as cyclic carbonates and thus decrease/remove the reliance on non-sustainable feedstocks.</p> <p>However, current limitations relating to the availability and range/types of renewable carbon cyclic carbonates at scale is a limiting factor to the commercial application of NIPU's. <b>We are looking for a partner who can develop and manufacture at scale bio-based (or other types of renewable carbon such as recycled, or CO<sub>2</sub> captured) monomers that could be used in commercial NIPU production.</b></p>
<b>Expected results</b>
<ul style="list-style-type: none"> <li>• Development and scale up of production for di-cyclic-carbonates suitable for use in NIPU production for flexible coating applications (preferably on multi-ton-scale) in an environmentally and socially responsible way.</li> <li>• Maximise the amount of renewable carbon content of these di-cyclic-carbonates &amp; ultimately of the NIPU itself</li> </ul>

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- Reduce the carbon footprint (CO<sub>2</sub>) of the NIPU's while maintaining performance compared to conventional polyurethanes used in similar applications

### Types of Collaboration

1. Pilot running and product testing
2. R&D opportunity
3. New business model exploration (i.e., exclusive distribution, profit sharing, IP sharing ...)
4. Knowledge sharing and Tech Transfer
5. Sales and purchase of products and services

### Participation confirmation

I confirm Stahl's availability and participation in the BioeconomyVentures programme. This confirmation allows BioeconomyVentures the right to publicly disclose the company's name, challenge information, logo and website for the purpose of dissemination and attracting new innovators to the programme.

### Company Information

**Company Name:** Stahl Holdings BV

**Challenge owner name and last name:** Tim Kidd

**Challenge owner email:** Tim.Kidd@stahl.com

#### Company information:

Stahl is driving the responsible chemistry of high-performance chemicals and coatings for flexible substrates. Our products enable sustainable living by adding functionality, durability and comfort to many different materials used in everyday life. Through our continuous focus on innovation and improving the environmental footprint, our unique service model and premium solutions add value to various industries ranging from automotive through to clothing and footwear.

At Stahl, we see our responsibility to participate in sustainable development as a duty to society and the environment, but also as an opportunity to do well by doing good. By embracing sustainable development, we aim to deliver value for all stakeholders, including our employees, customers, suppliers, partners, and society at large.

With our headquarters are located in Waalwijk, the Netherlands, Stahl has around 1800 highly-skilled employees having a global presence with R&D labs, manufacturing, and marketing & sales offices in the Americas, Europe and Asia.

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