

# Road construction using bio-based materials

A good practice case

Contracting authority:  
**Province of Zeeland (the Netherlands)**

Prepared by  
**ICLEI European Secretariat**  
Giuliana Longworth & Amalia Ochoa  
Contributors:  
**BTG** – John Vos

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## 1. Background

The Dutch Province of Zeeland is one of the frontrunners in Europe applying bio-based public procurement with a view to stimulate the transition to a circular economy.

In 2016 Zeeland adopted an Action Plan for Sustainable Procurement (2017 – 2020) in which it formalised its intention to use public procurement to create social value and to encourage more sustainable procurement actions (in general), including also bio-based procurement. The Province aims to achieve three procurement actions annually which actively support the bioeconomy, by applying a procurement model developed in-house. Furthermore, before 2020, at least two innovation-oriented procurement pilots will be implemented concerning circular and bio-based applications.



In line with their 'practice what we preach' philosophy, Zeeland has already procured bio-based products on various occasions, including bio-based work wear, packaging for IT hardware components, the refurbishment of a meeting room with furniture made from bio-based materials, and bio-based packaging for their in-house restaurant.

This case study presents a recent construction works procurement - the upgrade done of the N62 road 'Tractaatweg' – which sought to include solutions made from bio-based materials. The approach to the upgrade is in line with Zeeland's ambition of encouraging a lower carbon economy through preferring bio-based products with a low carbon footprint, which also offer life cycle benefits.

## 2. Organisation of the procurement

The procurement sought to commission a works contract to widen the N62 road 'Tractaatweg' (100 km/h) in Zeeuws-Vlaanderen from one to two lanes in each direction, and to build four new viaducts. The N62 is a major road connecting the seaports and the industrial areas of Ghent (in Belgium) with Terneuzen and Vlissingen (in the Netherlands). The Province of Zeeland sought to widen this North-South road connection to help improve the flow of traffic and road safety.

The procedure was carried out using a Competitive Dialogue approach involving:

- Publication of a **Prior Information Notice (PIN)**, published in February 2016
- A dialogue phase, which kicked off in May 2016
- Contract award, which took place in December 2016

The competitive dialogue approach gave Zeeland the flexibility to initially propose broad and more general requirements which enabled suppliers, at a later stage, through a dialogue process (with the provincial government), to fine-tune their offer and meet Zeeland's final requirements.



### 3. Procurement procedure

#### **Publication of the Prior Information Notice (PIN):**

Zeeland's PIN served to inform the 'market' of its needs and requirements for the upcoming road works, in a general way. And also to announce that the procurement would be organised through a competitive dialogue process. In terms of the references made to the use of bio-based materials, this was only briefly and generally stated in the PIN alongside a definition for bio-based products. The definition included was that "bio-based products contain ingredients that are fully or partly derived from biomass".

The following websites were also provided as for further information (for bio-based materials):  
<http://www.biobasedbouwen.nl/producten/>  
<https://www.coebbe.nl/producten>  
<https://www.zeeland.nl/beleid-en-regelgeving/biobased-inkopen>.

#### **The Competitive Dialogue process:**

Suppliers which responded to the PIN were invited to take part in the competitive dialogue, which consisted of three rounds. During the second round<sup>1</sup> suppliers were provided with the specifications for delivering their bio-based plan. Interested suppliers were asked to submit a separate stand-alone plan covering the bio-based component exclusively. The plans proposed by the suppliers were discussed with the procurement team, which also helped, during dialogue rounds two and three, suppliers to meet the requirements and improve their plans.

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<sup>1</sup> In the first round of the competitive dialogue other issues/plans where discussed.

At the end of the competitive dialogue, the final plans (which served as tenders/bids) were submitted. These were then assessed based on Zeeland's initial requirements and the award criteria published by Zeeland's procurement team. Details of the award criteria are provided further below.

### **Technical specifications:**

During the dialogue process, the companies who responded to the PIN were asked to deliver two specific bio-based products plus one or more products from a pre-identified list of market-ready bio-based options. In addition, they were asked to deliver at least one 'pilot testing' of their own choice from a list of pre-identified innovative bio-based products.



The rationale behind the approach used was to provide the companies taking part in the competitive dialogue process as much flexibility as possible, whilst ensuring that the expectations of the contracting authority would also be met.

### **1) Provision of bio-based products:**

Companies were expected to supply two bio-based product solutions:

- 1.2.** Biobased geotextiles<sup>2</sup>
- 1.3.** Biodegradable underground tree anchoring system

### **2) Bio-based products' application packages:**

Zeeland suggested three options regarding the products' application. Suppliers were given the possibility to choose a minimum of one approach among the options made, which were:

- 2.1.** The use of bio-based materials for the road proper (in its under-layer)
- 2.2.** The use of bio-based asphalt (in the top layer)
- 2.3.** The use of bio-based road furniture<sup>3</sup> and equipment such as public transport stands and reflecting signs.

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<sup>2</sup> For more information on bio-based geotextiles, please see <http://biobasedprocurement.eu/wp-content/uploads/2016/02/Bio-based-Geotextiles.pdf>

<sup>3</sup> For more information on bio-based street furniture, please see <http://biobasedprocurement.eu/wp-content/uploads/2016/02/Bio-based-Street-Furniture.pdf>

### 3) Pilot plans:

The participating companies were expected to conduct some pilot testing of other bio-based products. This specification was included to make it possible for bio-based product suppliers - new to the market - to upscale their production. Companies were free to choose more than one pilot solution to include in their pilot plans from the following:

- 3.1.** Use of partly bio-based bitumen
- 3.2.** Use of bio-based ingredients for road marking
- 3.3.** Bio-based coating
- 3.4.** Cabinets for traffic light installations made from bio-based composites

Once they had made their choices, the companies were free to come up with their own plan for the pilot, including their own choice of suppliers.



### Award criteria:

Following the dialogue phases, the Province of Zeeland assessed the plans/offers submitted and awarded the contract based on the 'most economically advantageous tender' (MEAT), which used a combination of price and quality criteria to determine the winning tender. Price and quality were split as follows:

- (1)** Price (60% of total score)
- (2)** Quality (40% of total score).

## 4. Results

In total, the PIN received six expressions of interests and two companies were invited to the competitive dialogue phase and submitted final plans/bids.

The winning company, who was awarded the contract, chose one of each of the proposed solutions for the products' application and piloting. The two "compulsory prescribed" bio-based materials - bio-based geotextiles and biodegradable underground tree anchoring system - were applied to the road construction itself for constructing the road's under-layer. And piloting was undertaken for the installation of cabinets for traffic light installations made from bio-based composites.

The works contract was assigned in February 2017, and preparatory work took place between March and August 2017. Commissioning is scheduled for early 2019

## 5. Lessons learned

- The competitive dialogue approach allowed potential suppliers more flexibility to take into account the complexity, in terms of scale, of the project while also considering the challenges of purchasing bio-based solutions, as these are mostly not available on the mainstream market.
- The description of solutions proposed by Zeeland need to offer the opportunity of providing different solutions which are similar, in terms of costs and risks, and the supplier needs to justify the choice(s) made.
- It is advisable not to price the various components and/or phases separately, but rather ask suppliers/companies to provide a single price for the whole project. This will enable you, as the contracting authority, to more easily control risks and costs. It also makes it easier for the supplier to price its offer more precisely.
- Given that we are mostly dealing with very novel markets when considering bio-based products for use in construction, it would be helpful if contracting authorities provide potential tenderers/bidders with a list of suppliers of bio-based products when publishing their invitation to tender.
- The project value was of such magnitude that only nationally operating suppliers were able to respond to the invitation to tender. To stimulate the involvement of SMEs the tender scope included a consideration to subcontract part of the work to SMEs.
- Try to be as flexible as possible when setting tender specifications. Tenderers approached the bio-based aspect in innovative and creative ways but found difficulties to include their suppliers' suggestions due to restrictive and detailed specifications set by the contracting authority.



<b>Contact person:</b>	Martin Scherpenisse MFC QC Senior Strategisch Inkoopadviseur Provincie Zeeland <a href="mailto:mc.scherpenisse@zeeland.nl">mc.scherpenisse@zeeland.nl</a>
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<b>For reference</b>	The PPI Guide: Guidance for public authorities on Public Procurement of Innovation  <a href="https://www.innovation-procurement.org/about-ppi/guidance/">https://www.innovation-procurement.org/about-ppi/guidance/</a>
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# Contact

ICLEI – Local Governments for Sustainability  
European Secretariat  
Leopoldring 3, 79098 Freiburg, Germany

Tel: +49-761 / 368 92-0  
E-mail: [info@innprobio.eu](mailto:info@innprobio.eu)  
[www.innprobio.eu](http://www.innprobio.eu)

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