



*Made from reclaimed potato starch!*



# **GIVE NATURE A CHANCE!**

**Ecosystem Restoration with BESE-Elements<sup>®</sup>  
(Biodegradable Ecosystem Engineering Elements)**

**ENEXIO Water Technologies**  
in cooperation with  
**Bureau Waardenburg** and  
**Rodenburg Biopolymers**





Restoration of marches and mangroves



Restoration of natural habitat



**Nature restoration of damaged ecosystems needs**

- 3D structures for attachment
- Reduction of local currents and waves
- Shelter and protection from predators
- Stability



**Aquaculture – Mussel and oyster spat**



Water purification



Roadside plantations

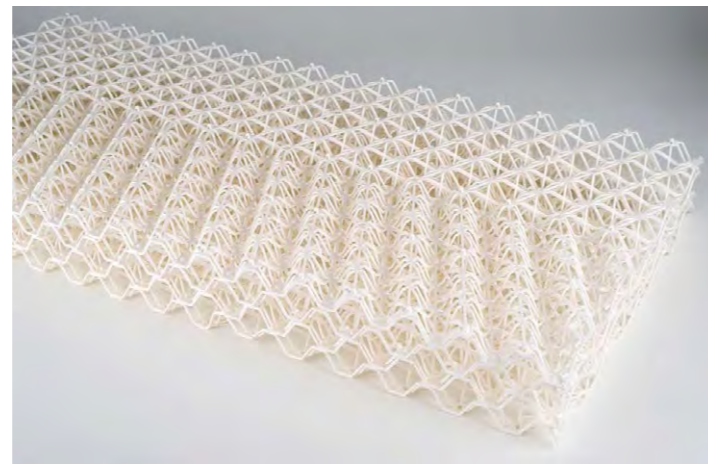
**BESE-Elements® – Room for Nature  
Lost ecosystems**

A great loss of ecosystems like wetlands, mangroves, coral-reefs has been experienced within the last decades. At the same time it was acknowledged that they deliver valuable ecological services for water purification and storage, carbon sequestration and coastal defense.

**Solid 3D structure for habitat improvement: BESE-Elements®**

Restoration of ecosystems needs artificial structures as starting point. In search of such structures for the recovery of mussel beds, ENEXIO Water Technologies, Bureau Waardenburg and Rodenburg Biopolymers partnered to find an environmentally-friendly solution:

A biodegradable three-dimensional solid grid, the BESE-Elements® (Biodegradable EcoSystem Engineering Elements) was developed.



**Features/Advantages of BESE-Elements®**

Made of starch from potato waste the BESE-Elements® degrade under environmental influences and do not need composting agents or specific temperatures.

- Environmental-friendly and sustainable material
- Side stream potato starch
- Renewable raw materials
- Carbon neutral, non-toxic product
- Biodegradable and digestible

**Applications of BESE-Elements®**

At first BESE-Elements® present a temporary structure and protection for organisms to start growing. After a certain time, sufficient adult organisms have grown and built up a structure on their own for younger ones to settle on. During this process the BESE-Elements® break down and the organisms establish and enlarge their own structure.

Currently BESE-Elements® are used to stimulate the recovery of natural mussel beds in the Wadden Sea. Further pilot projects include the growth of reed beds, coral reef restoration and water purification.

**We see potential use of BESE-Elements® in many more applications:**

- Aquaculture (collection of oyster spat, protection for fish and shrimp larvae)
- Water purification, sewage treatment, aquaculture and soil aeration
- Base structure for the recovery of natural mussel and oyster beds
- Coastal protection
- Ecosystem restoration or protection (e.g. mangrove, seaweed, reefs, wetlands)
- Habitat creation
- Fortifying of lawns
- Sand trap



Mussels after one year of growth

Is there any application you may think of and want to start a pilot with us?

→ Please call us at: +49 2557 9390 0

→ or send a mail to: 2h.germany@enexio.com

Visit [www.bese-ecosolutions.com](http://www.bese-ecosolutions.com) to get the latest information.



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ENEXIO Water Technologies, Germany,  
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