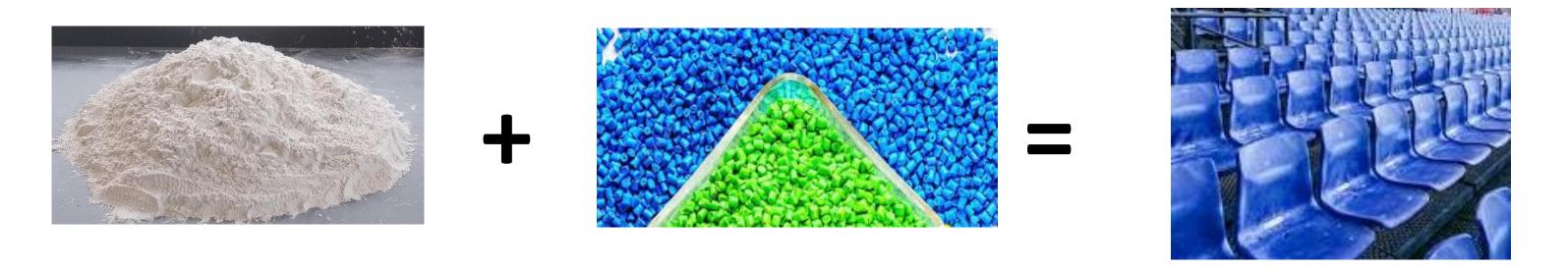








THERE IS A SERIOUS DOWNSIDE TO RENEWABLE ENERGY, AND IT'S GROWING RAPIDLY. EACH BLADE THAT GOES UP, MUST COME DOWN. THEY ARE NOW BURNED OR BURIED. EXTREME ECO SOLUTIONS HAS BETTER IDEAS AND KNOWS WHAT TO DO WITH THEM.



Recycled plastics provide a range of opportunities, and should be fully accepted and seen as a traditional material. It has a weakness however. It lacks the strength of virgin plastics, which prevents it from reaching the same level of performance. In many cases, this triggers the choice for new plastics. Extreme Eco Solutions has developed a way to enhance recycled plastics by adding grinded blade material to the granules. The end product will be stronger and more recilient, while using less material in total. This concept takes recycled plastic to a new level, while turning downsides to upsides.

Stadium seats come in volume, which makes it an attractive item to be produced from 100% recycled materials. The blade plastic provides freedom and a challenge for designers, because 3D printing and injection moulding rely on their ideas. Durability, comfort and sustainability are key, while keeping costs on a competitive level.

Next to incorporating Spanish blades and plastic into our concept, we should see if plastic waste from stadiums can be used as well. This would boost circularity, and help to reach sustainability goals.

## **BUSINESS**

EES has developed several concepts since 2014 with the objective to recycle glass fibre reinforced plastics (GRP). We use it to manufacture pavement, wall tiles and we use it as a filler to replace virgin chalk and glass fibre in a range of new products. The concept with which we hope to support La Lige in their effort to upgrade their sustainability is using old plastic, and mix it with blade material to make it more durable. The methods that can be used to manufacture stadium seats for instance is injection moulding, a common and trusted technique. But not only seats. Injection moulding opens opportunities, as does 3D printing.

## The business case as we see it could look like this:

- An interested party would like new stadium seats. Together with our Dutch design partner Marcel van Galen Design we will discuss the looks and specifications of the seats, and come back with a design proposal.
- Once the design is approved, EES will contact a Spanish injection moulding company that is able to produce the seats.
- EES will provide recycled plastic, sourced from a Spanish plastic recycler. If possible, stadium waste has preference.
- EES will provide blade material in the right fraction size. We have good connections with an Enel / PreZero processing plant in Northern Spain. This plant processes 6000 tonnes of blade each year, so there will be more than enough material available.
- Moulds are fabricated, production can start.

Dutch design, Spanish waste, Spanish production company, Spanish end user. This value chain applies to each desired product. When a potential client would like sockets or switches for example, the process would be the same. The feedstock of recycled plastic as well as blade material is virtually endless. Outsourcing every step in the process to specialized companies ensures high and steady quality, as well as competitive costs. The fact that we don't need a factory, machinery, employees etc also means that we could start tomorrow. We feel that the blade plastic concept offers opportunities to La Liga and its members, extending to Spanish businesses in general.

## **TECHNICAL**

The plastic comes in granules, which are melted before being injected into the mould. Adding blade material can be done at the recycling plant that provides ready to go granules, or it can be mixed in during melting at the injection moulding company. This depends on costs, and on the machinery of the injector company. The masterbatch which makes up the granules is 50/50 plastic and blade material.

The moulds for the seats are manufactured based on a 3D design.

Colours, degree of smoothness, size, assembly pre-work, and thickness of the material are all subject to the desire of the client.

Adding blade material increases the melting / flash point. The increased durability protects the seats more from crowd enthusiasm than regular plastic seats. Blade material decreases the influence of UV.



SOMETIMES SOLUTIONS ARE SPINNING RIGHT IN FRONT OF YOU



## CIRCULAR IS THE NEW TRADITIONAL

Extreme Eco Solutions BV was founded in 2014. Next to undersigned (Sebastiaan Verheijen) there are two equal shareholders, Marielle Wiegmans and Vincent Hilgers. They have a long business track record, and are very much involved and supportive in all areas.

https://www.linkedin.com/in/mariellewiegmans/ https://www.linkedin.com/in/vincent-hilgers-a428ab/

EES is registered in Nijkerk and holds office at Middenduin Corporate Finance, the warehouse and workshop is located in Dronten. Turnover 300.000, capital raised 250.000, dept 300.000 (real estate purchase / the warehouse).



