

# Leasing clothes for stewards



Rijkswaterstaat  
Ministry of Infrastructure and the  
Environment



Project supported by LIFE funding



**Company:** Rijkswaterstaat  
**Innovative business model type:** Leasing clothing  
**Sector:** Textiles  
**Company size:** Large  
**Service:** Remanufacture of workwear

## Key facts

- Rijkswaterstaat (RWS) is the Dutch waterways, public works and environment authority.
- As part of a commitment by the Dutch Government to achieve maximum re-use and recycling, REBus worked with RWS to set up a pilot, exploring the potential for remanufacturing workwear.
- RWS needed to know if used clothing could be 'deconstructed' successfully back into its component materials and then be used to create more clothing.
- All of the clothing was successfully recycled, with some items requiring additional material added for remanufacture into new items (raincoats).
- In the initial pilot, 50 lock stewards were issued with caps, polo-shirts, raincoats and fleece jackets made of 100% recyclable polyester materials.
- RWS has now launched a second pilot looking specifically at rainwear, with REBus supporting through the dissemination of lessons learned.

Key facts

Introduction

The pilot

Results

## Case Study



Rijkswaterstaat  
Ministry of Infrastructure and the  
Environment

## Introduction

Rijkswaterstaat (RWS) is part of the Dutch Ministry of Infrastructure and the Environment. It is responsible for the design, construction, management and maintenance of the main infrastructure facilities in the Netherlands.

### REBM for remanufactured workwear

Throughout the summer season, lock stewards supervise the waterways, and are on hand to assist leisure sailors. Out and about in all weathers, the lock stewards' clothing needs to survive everything that the Dutch weather – and a highly active job – throws at it.

As part of a 2016 pilot reflecting the Dutch government's aspiration to achieve maximum re-use and recycling, 50 lock stewards were issued with caps, polo-shirts, raincoats and fleece jackets made of 100% recyclable polyester materials.

"We are often asked whether it would be easier just to re-use the uniforms, especially as in this case they are only used for a few months each year. But even if we did opt for this, after a while the clothing would still not be wearable. What then? That's why this pilot project is investigating recycling."

*Wilco Kalkman, Facilities Advisor, Rijkswaterstaat*



Key facts

Introduction

The pilot

Results

## The pilot

The pilot project's goal was to determine whether the idea of manufacturing, deconstructing and then remanufacturing workwear made environmental and economic sense on a broader scale.

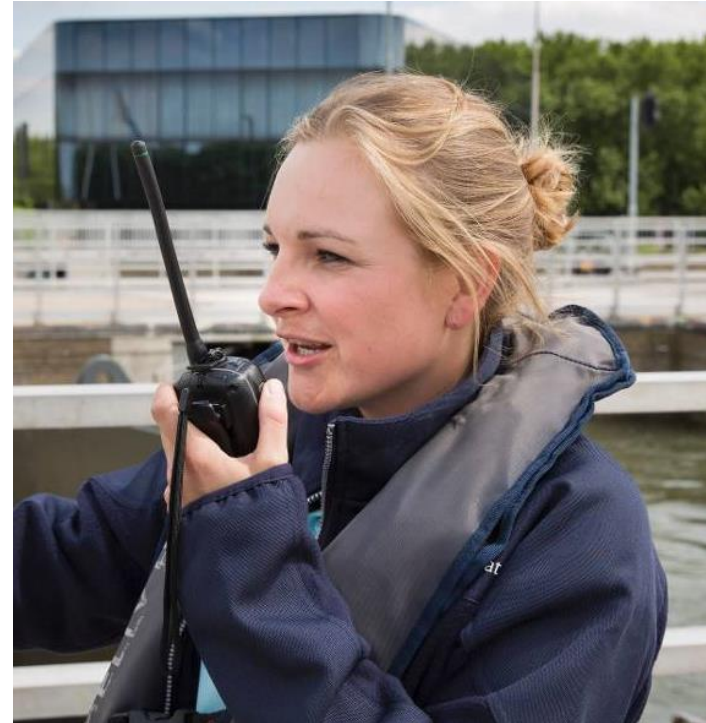
Supplied by innovative manufacturer Dutch aWEARness, the season's uniforms are returned to be 'dematerialised' into their component raw materials. The manufacturer claims that this 'new from old' process can be repeated up to eight times.

Re-use of the material was possible thanks to Returnity® (a 100% recyclable polyester material), and the Circular Content Management System, a track-and-trace system that Dutch aWEARness developed in collaboration with their partners to monitor the entire process. The system was developed in such a way that it could be used for supply chains other than the textile industry.

Fashion designer Rien Otto, who developed EcoProFabrics in 2013 and launched both Dutch aWEARness and its Returnity® fabric, noted recently that some 2,500 recycled garments are currently in circulation at RWS – a figure set to rise to 30,000 oil-based polyester garments, which can be melted down and re-spun into fabric.

At the end of the project, Dutch aWEARness will be asked for a full report detailing exactly what was done and what recycling volumes were achieved.

Dutch aWEARness has also conducted pilot projects to discover just what types of fabrics are needed across the workwear market, from suits to protective clothing. At least nine pilots have run so far, for Rijkswaterstaat, Royal HaskoningDHV, Brabant Water, Desso, Dura Vermeer and Auping amongst others.



Key facts

Introduction

The pilot

Results

## Challenges

Due to the high performance required from it, workwear can be difficult to recycle. As the public face of the company, it also needs to foster a positive image, so re-use in particular can pose issues, as well as plenty of technical challenges involved in sorting recycled textiles.

Although the raincoats were recyclable, the material retrieved from the process was not enough to make new raincoats, so additional material had to be added.

However, the benefits are significant: minimal new raw materials are needed for new workwear and no waste has to be incinerated.

If the pilot project is rendered a success, new RWS tenders could place increased focus on environmental aspects, not just for workwear but for a host of products.

“The workwear we are using in this pilot project is a bit more expensive than that which we would normally buy. What is unique about this pilot is the fact that we have leased the uniforms, not bought them.”

*Wilco Kalkman, Facilities Advisor, Rijkswaterstaat*

## Results

The pilot delivered a performance-based contract with Dutch aWEARness in which the supplier continues to own the clothing through a lease agreement. Used clothing is then returned to the supplier to be recycled.

The rainwear material can be re-used, thanks to Infinity, a 100% recyclable polyester, which is shredded into fibres which can then be used in new clothing in subsequent seasons.

Whilst there were some challenges with the raincoats, which were later resolved, the fleece jackets and polo shirts are fully recyclable and can also be turned into bags.

## Next steps

A second RWS pilot project has been launched, involving high-visibility rainwear by Dura Vermeer. The garments are to be monitored for two years and similarly, will be converted into new fabrics and rainwear after each period of use.

“I certainly think it would be interesting for others to roll out a pilot like this on a project basis, to get an idea of what’s involved.”

*Wilco Kalkman, Facilities Advisor, Rijkswaterstaat*

Key facts

Introduction

The pilot

Results



Rijkswaterstaat  
Ministry of Infrastructure and the  
Environment



Project supported by LIFE funding

REBus is a project delivered in partnership with:



Rijkswaterstaat  
Ministry of Infrastructure and the  
Environment



KTN  
the Knowledge Transfer Network



THE UNIVERSITY OF  
NORTHAMPTON  
School of Science and Technology

### Disclaimer

While we have tried to make sure this case study is accurate, we cannot accept responsibility or be held legally responsible for any loss or damage arising out of or in connection with this information being inaccurate, incomplete or misleading. This material is copyrighted. You can copy it free of charge as long as the material is accurate and not used in a misleading context. You must identify the source of the material and acknowledge our copyright.

You must not use material to endorse or suggest we have endorsed a commercial product or service. For more details please see our terms and conditions on our website at [rebus.eu.com](http://rebus.eu.com)

Case studies were generated as a result of pilots carried out for REBus by WRAP or RWS and the named organisations from 2013 to 2016.

**rebus.eu.com @rebuslife**