

‘Luminaire of the Future’ aims to revolutionise the European lighting industry

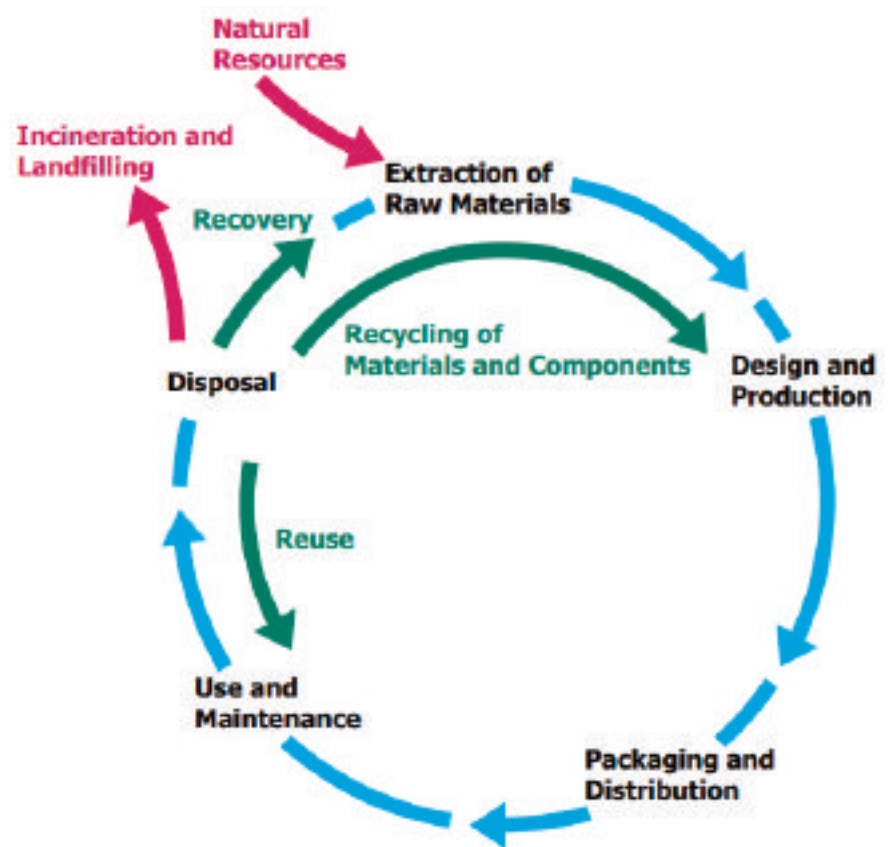
Here, Project Coordinator of “Repro-light” Wilfred Pohl explains how the customisable and sustainable ‘Luminaire of the Future’ aims to revolutionise European lighting in the workplace

The Horizon 2020 project “Repro-light” (Re-usable and re-configurable parts for sustainable LED-based lighting systems) aims to transform the European lighting industry to a circular economy, by creating the ‘Luminaire of the Future.’

Repro-light uses innovative technologies and materials to implement a modular luminaire architecture, a smart production scheme and also the development of a reconfigurable customised LED luminaires: the ‘Luminaire of the Future.’ The reputation of the LED luminaire will change from a disposable object, into a customisable and sustainable product, with a high function value.

The ‘Luminaire of the Future’ Lighting affects our perception and mood, our productivity, and can positively influence our ability to sustain attention both during the day and at night. Light controls the body’s circadian rhythm, and the light patterns experienced during the daytime affects sleep quality, which has a big impact on our health. The ‘Luminaire of the Future’ provides the right light for our activities, at the right place and at the right time of the day, adopted to our individual needs (personalised).

In a survey of 1100 workers in Germany, Italy, Spain, and Austria, 56% of



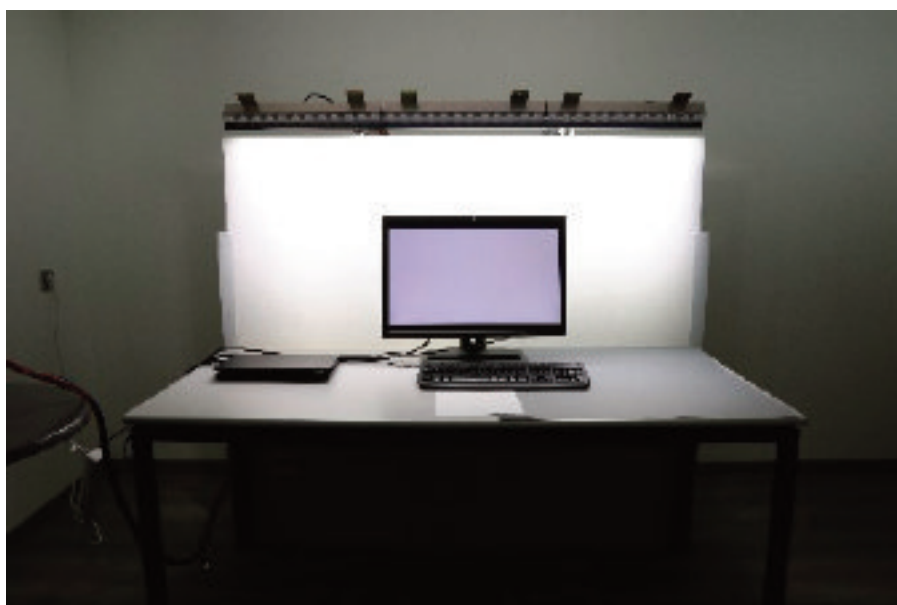
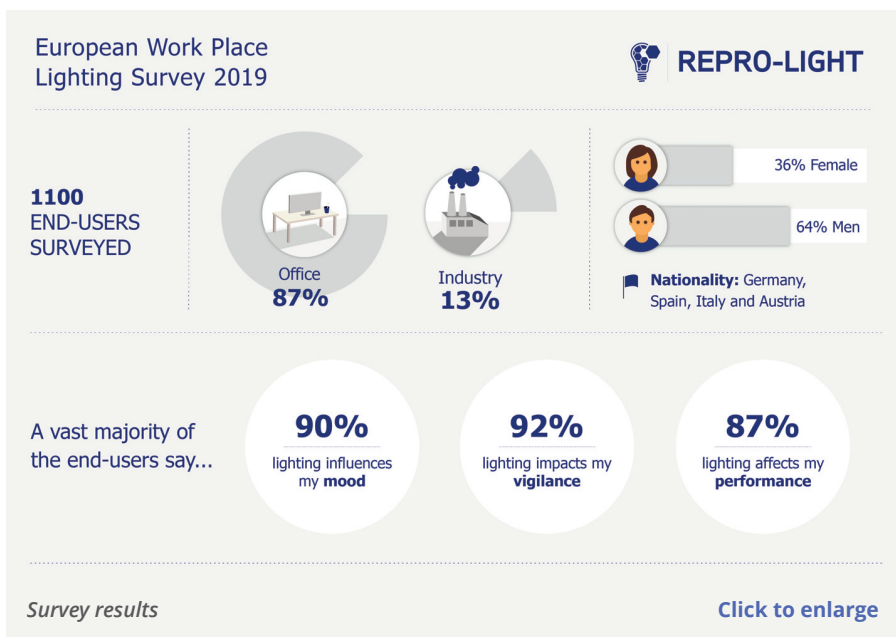
Source: UNEP/SETAC. *Life Cycle Management: A Business Guide to Sustainability*. Paris, 2007.

the respondents said they would like better workplace lighting. While over 90% of those queried believe work lighting affects their mood, 87% said it impacts their performance and 92% said it influences their alertness in the workplace. The majority of respondents stated that they want lighting which automatically adapts to personal needs and that changes colour when it gets dark outside.

Personal Table Light (PTL)

These research results confirm the requirement for an easy to use, customizable lighting system, which led to one of the final results, the so-called Personal Table Light (PTL).

The PTL achieves exceptional lighting for vision and health at the workplace and is fully personalisable by the user via a desktop application. Visual perfor-



Personal Table Light (PTL) prototype

mance is perfectly supported as both vertical and horizontal workspace surfaces are lit separately, and illuminance levels are controlled along with light colour temperatures, and light distributions. Furthermore, the PTL effectively supplements missing daylight and is able to exert non-visual effects on mood, alertness, performance and night-time sleep.

Equipped with single-point LED controls and a highly innovative sensor

technology that recognises the actual activity of the user, lighting scenes adjust discreetly and automatically according to the changing working tasks. Additionally, environmental quality is assessed continuously by ambient temperature, humidity, air pressure, volatile organic compounds, and sound level sensors.

In several field- and laboratory studies the effects of this lighting solution will be evaluated.

The consortium is made up of European leading experts including TRILUX, a driving force of the European lighting industry, manufacturers including BJB, Grado Zero Espace, and Rohner Engineering, innovative members of the lighting industry Bartenbach and Luger Research, as well as experts on lighting sustainability and Life Cycle Assessment IREC and Mondragon University who are prominent in Social Sciences.

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To sign up for updates on the project, and for more information about Repro-Light please visit the website www.repro-light.eu



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Wilfried Pohl
Project Coordinator
 Bartenbach GmbH
 Tel: +43 512 3338 266
wilfried.pohl@bartenbach.com
www.repro-light.eu
[www.twitter.com/ReproLight](https://twitter.com/ReproLight)